Honeywell

CONVERSION WIRING DIAGRAMS FOR BC7000L1000

The diagrams and instructions contained in this booklet are for converting the following model programmers to BC7000 Microcomputer Based Burner Control System.

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CAUTION

1. Installer must be a trained, experienced, flame safeguard control service technician.
2. Disconnect power supply before beginning installation to prevent electrical shock and equipment damage.
3. All wiring must comply with applicable local electrical codes, ordinances, and regulations.
4. Voltage and frequency of the power supply and flame detector(s) connected to this control must agree with those marked on the device.
5. Loads connected to the control terminals must not exceed those listed in the SPECIFICATIONS section.
6. All external timers must be listed or component recognized by authorities having jurisdiction, for the specific purpose for which they are used.
7. Perform all required checkout tests after installation is complete.

IMPORTANT

For on-off, gas-fired systems, some authorities having jurisdiction prohibit the wiring of any limit or operating contacts in series with the main fuel valve(s).

P.G.
Rev. 6/89

Form Number 66-6002—4

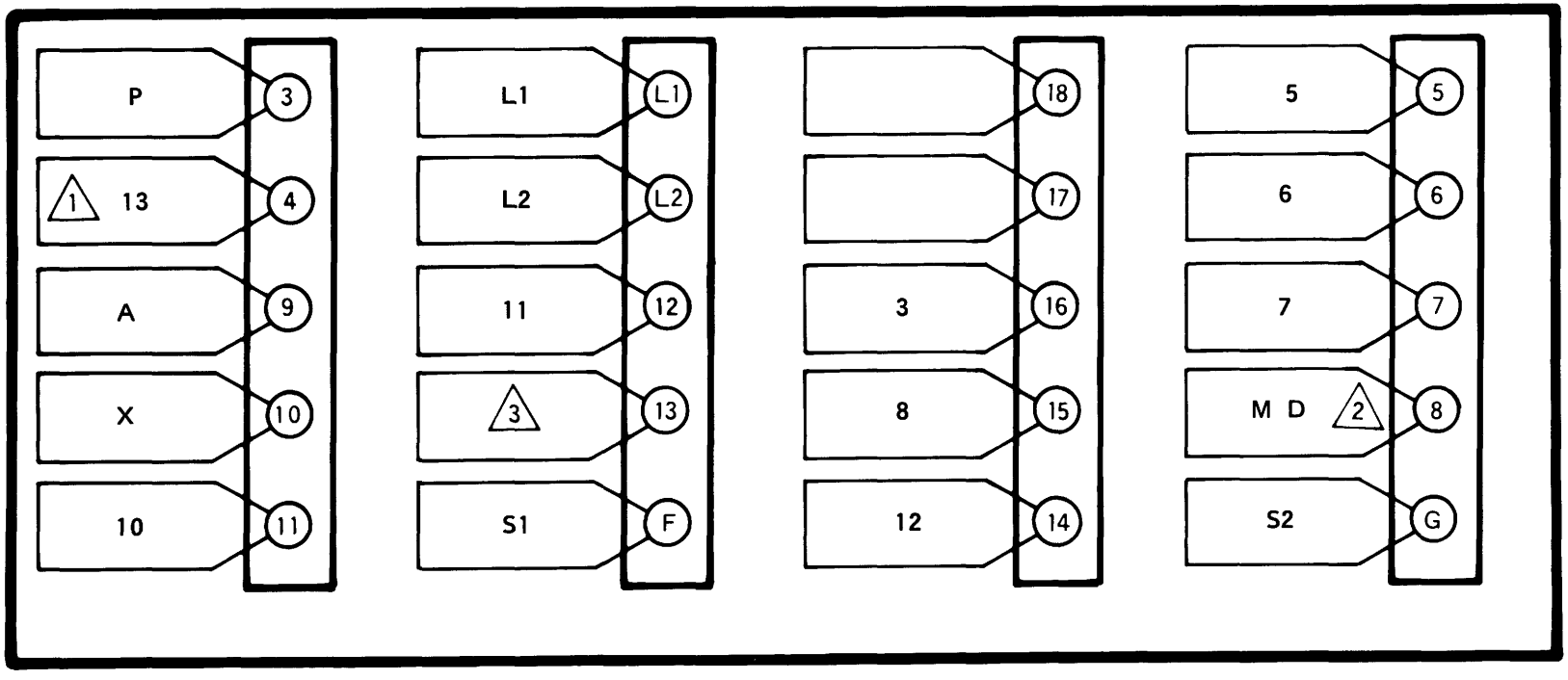
SECTION I

FIREYE C, D, E-SERIES CONTROL
120 V ONLY

DIRECTIONS:

1. Disconnect all power to programmer.
2. Remove old programmer from subbase (trade-in to Honeywell Authorized Flame Safeguard Distributor).
3. Mark all wires on subbase; i.e., wires connected to terminal “D” should be marked “D.” Disconnect wires as they are marked.
4. Remove old subbase.
5. Mount Q520A subbase.
6. Connect wires to subbase per attached cross reference. Pay close attention to footnotes. For example: To convert a Fireye 70D10 to a BC7000, the wire marked “P” would connect to terminal #3 on the Q520. The wire marked “8” would connect to Q520 terminal #15.
7. The symbol “  “ designates a footnote. Study these footnotes carefully.
8. Plug in the BC7000. Make sure you select the proper amplifier, detector and program module for the application.

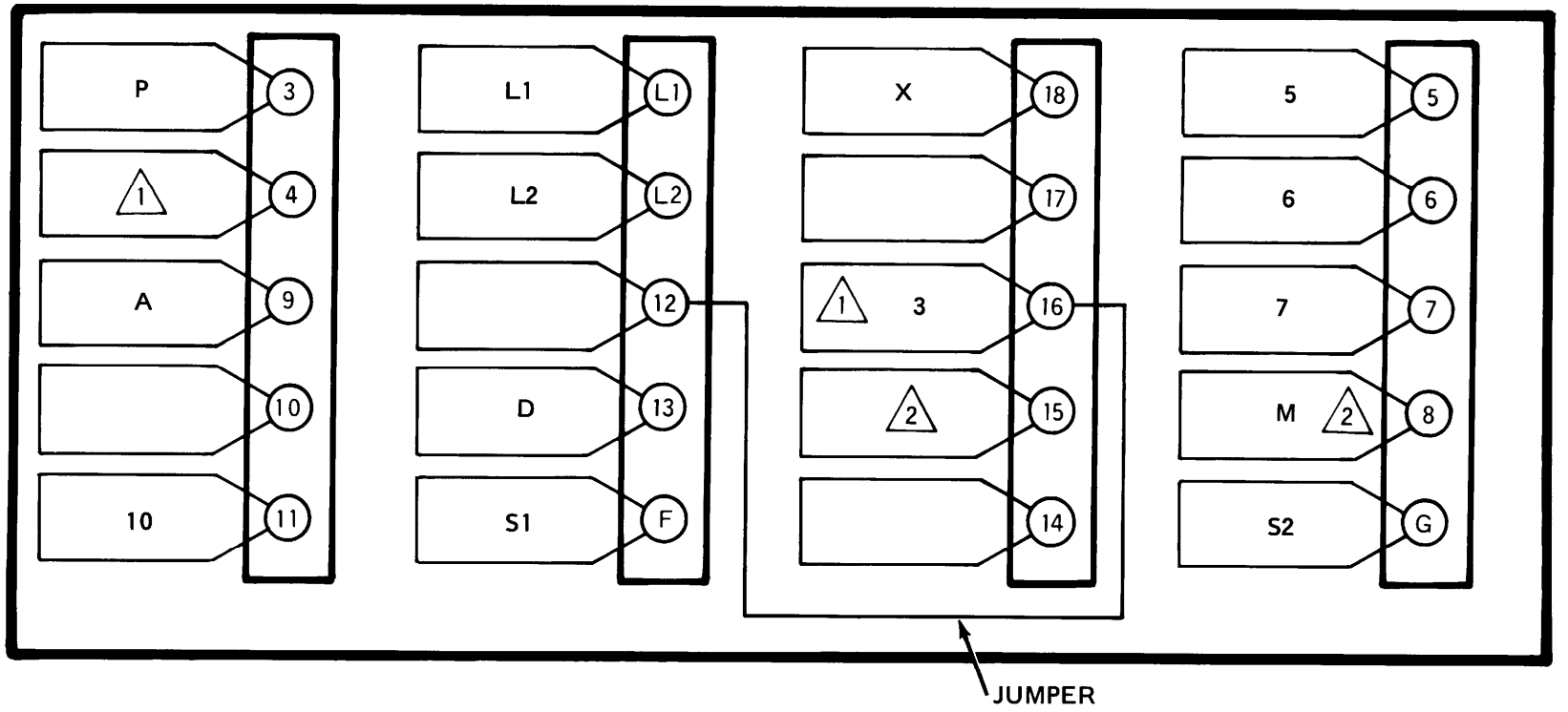
FIREYE 70D10/26CF6-5022/26 CU6-5065 EP160/EP161/EP170 TO BC7000L/PM720L2004 or 1030



1. LOCATE THE OPERATING CONTROLLER LEADWIRE. DISCONNECT THIS WIRE AND RECONNECT IT TO THE Q520 TERMINAL 16.
2. FOR THE PM720L2004 MODEL ONLY. CONNECT THE LEADWIRES FROM FIREYE TERMINAL D TO THE Q520 TERMINAL L1.
3. LOCATE LOW FIRE SWITCH LEADWIRE OFF FIREYE TERMINAL M AND CONNECT IT TO Q520 TERMINAL 13.

E1214A

FIREYE 24CJ5 - 5010/5011/3010/3011
25CU6 5062/5063/RS-2E
70D30/26CF6 5020/5021/1010/1011
EP380/EP381/EP390 TO BC7000L/PM720M2002

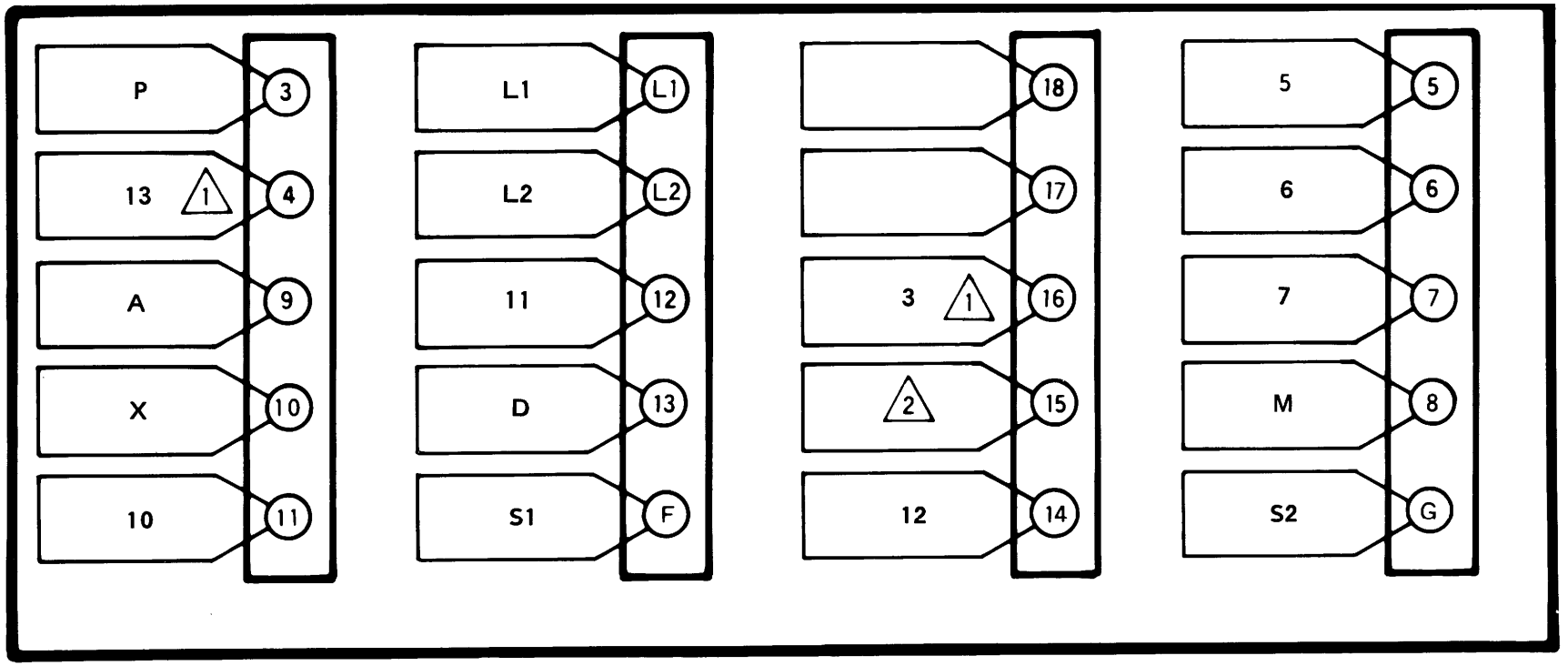


1. LOCATE THE ELECTRICAL JUNCTION OF THE OPERATING CONTROLLER, PREIGNITION INTERLOCK AND RUNNING INTERLOCK CIRCUITS AND CONNECT THIS ELECTRICAL JUNCTION TO THE Q520 TERMINAL 16. IF NO PREIGNITION INTERLOCKS ARE USED, JUMPER Q520 TERMINALS 4 AND 16.

2. THE STANDARD PREPURGE TIME IS 90 SECONDS. THE PREPURGE BECOMES 30 SECONDS WHEN THE Q520 TERMINAL 8 IS JUMPERED TO 15.

E1215B

FIREYE 24CJ5 5015
70D20/26CF6 5023/25 CU65055
EP260/EP261/EP270 TO BC7000L/PM720G2005



1 LOCATE THE OPERATING CONTROLLER LEADWIRE. DISCONNECT THE WIRE AND RECONNECT IT TO THE Q520 TERMINAL 16.

2 THE STANDARD FLAME ESTABLISHING PERIOD AT TERMINAL 6 IS 15 SECONDS. THE FLAME ESTABLISHING PERIOD BECOMES 30 SECONDS WHEN Q520 TERMINAL 8 IS JUMPERED TO 15.

E1216A

SECTION II

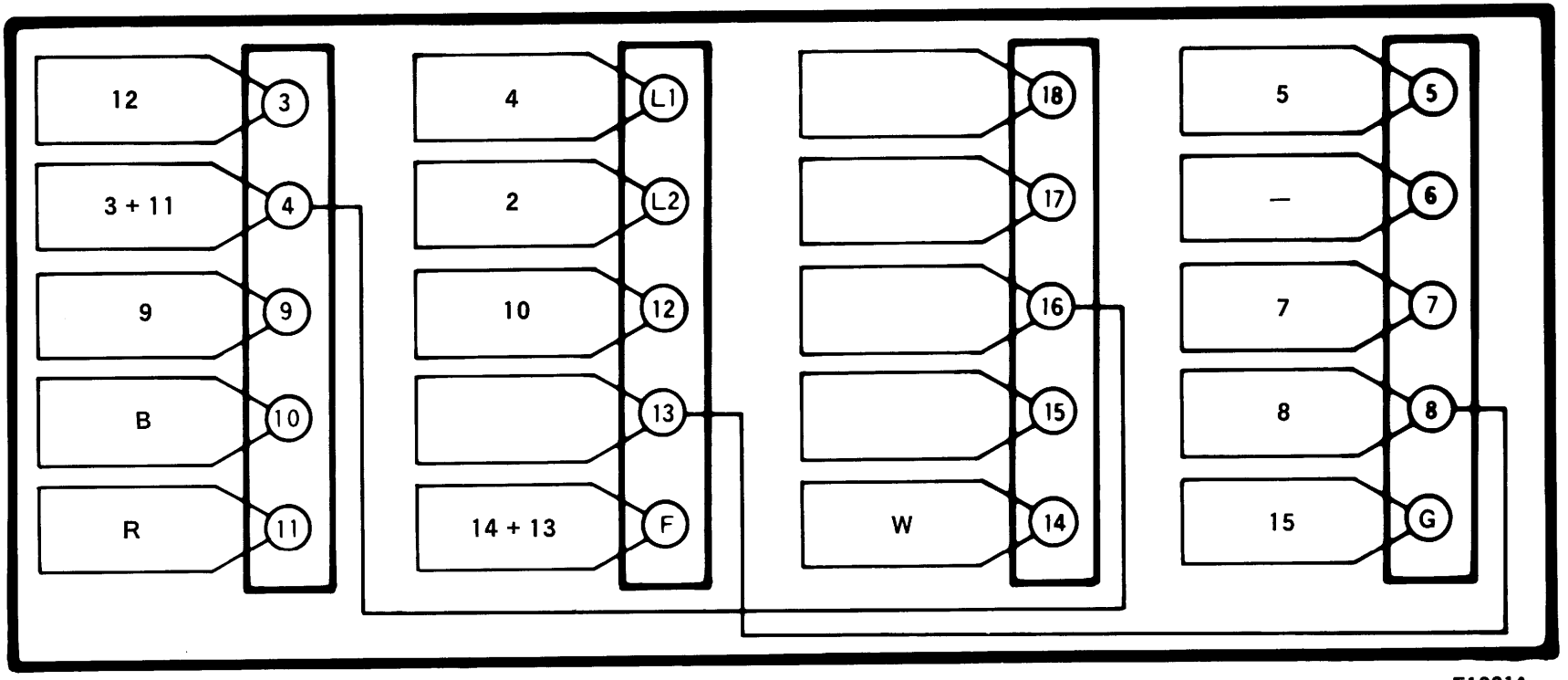
FIREYE P-SERIES CONTROLS
120 V ONLY

DIRECTIONS:

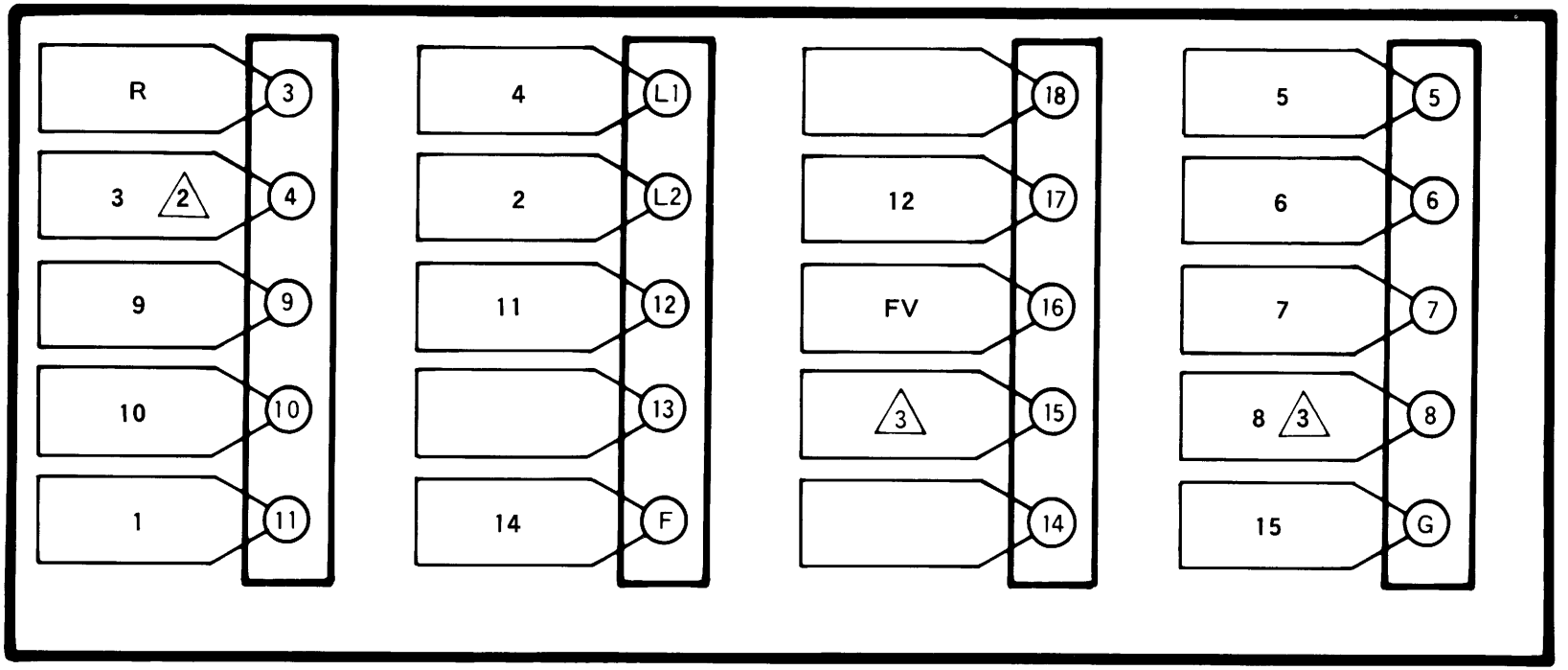
1. Disconnect all power to programmer.
2. Remove old programmer from subbase (trade-in to Honeywell Authorized Flame Safeguard Distributor).
3. Mark all wires on subbase; i.e., wires connected to terminal “D” should be marked “D.” Disconnect wires as they are marked.
4. Remove old subbase.
5. Mount Q520A subbase.
6. Connect wires to subbase per attached cross reference. Pay close attention to footnotes. For example: To convert a Fireye 26RJ81016 to a BC7000, the wire marked “B” would connect to terminal #10 on the Q520. The wire marked “W” would connect to Q520 terminal #14.
7. The symbol “ 

“ designates a footnote. Study these footnotes carefully.
8. Plug in the BC7000. Make sure you select the proper amplifier, detector and program module for the application.

FIREYE 26RJ8 1016, 1016T
26RJ8 1012, 1012T, 6012, 6012T **TO** **BC7000L + PM720G2005**



FIREYE 25RLJ84580 TO BC700L + PM720L1030 △1



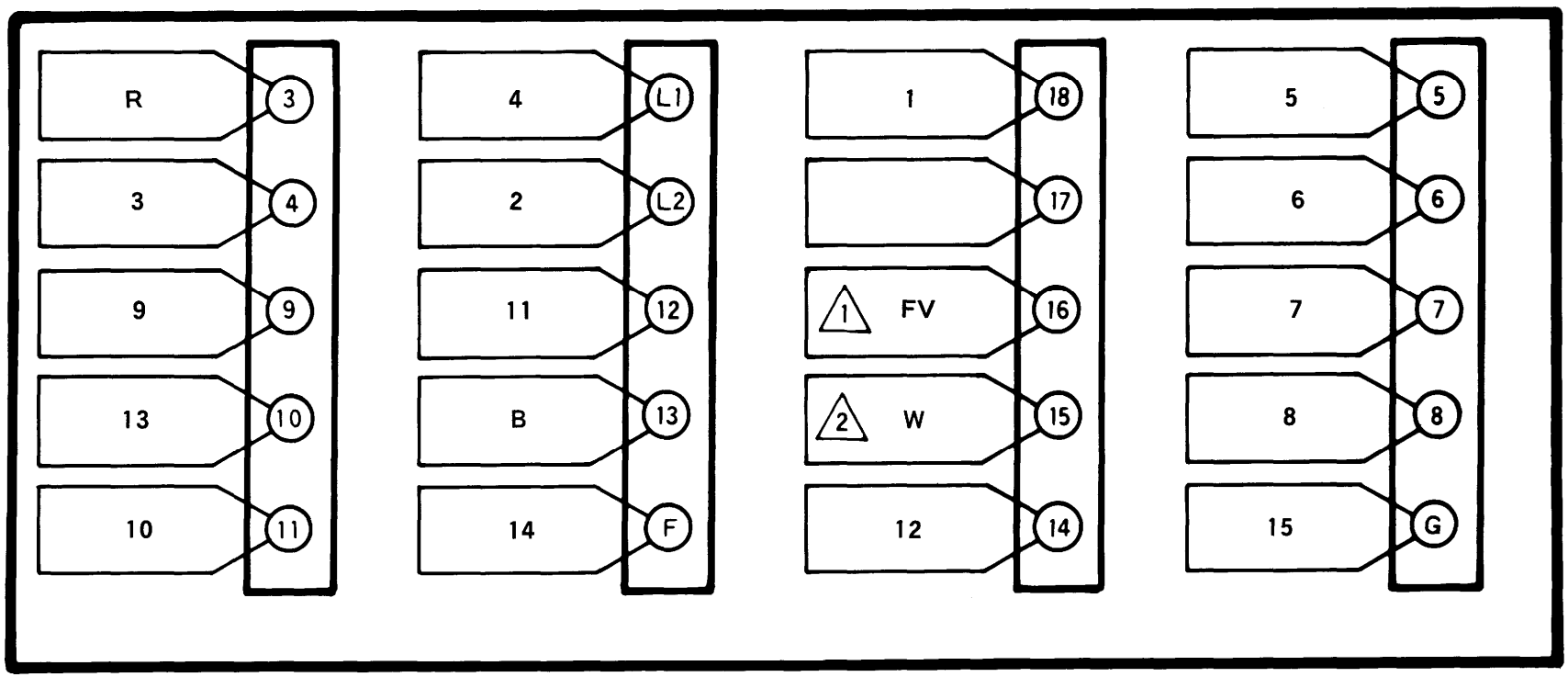
△1 USE THE R7247C1001 FLAME SIGNAL AMPLIFIER AND THE C7012E FLAME DETECTOR.

△2 LOCATE THE LEADWIRE OF THE LIMITS AND BURNER CONTROLLER CHAIN. CONNECT THIS LEADWIRE TO THE Q520 TERMINAL 16.

△3 LOCATE THE LEADWIRE OF THE HIGH FIRE INTERLOCK SWITCH. CONNECT THIS LEADWIRE TO THE Q520 TERMINAL 15.

E1693

FIREYE 25RU8 6560, 6570,6580
26RJ8 6060, 6070,6080, 6160 TO BC7000L + PM720L1030

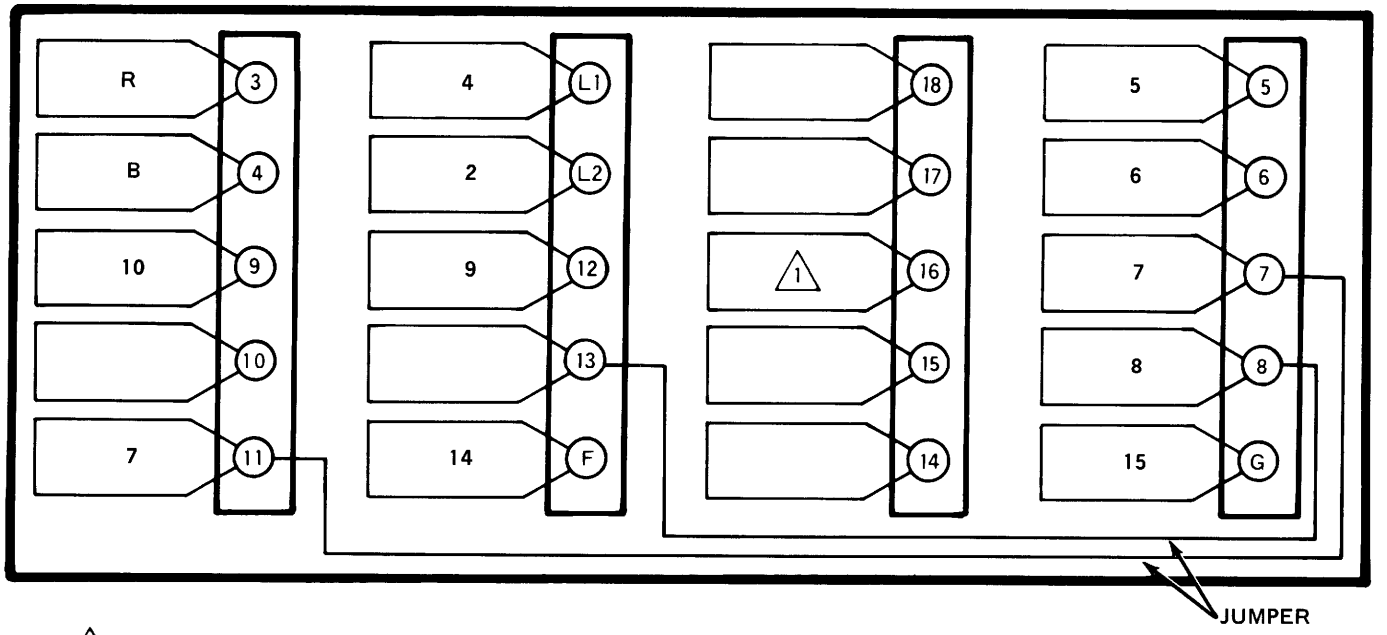


1 FOR 26RJ8-6060, 6070 AND 25RU8-6560, 6570 JUMPER Q520 TERMINALS 4 TO 16. ON OTHER MODELS LOCATE CONTROLLER AND LIMIT CIRCUIT WIRE ON FIREYE TERMINAL 3. DISCONNECT WIRE AND CONNECT IT TO Q520 TERMINAL 16.

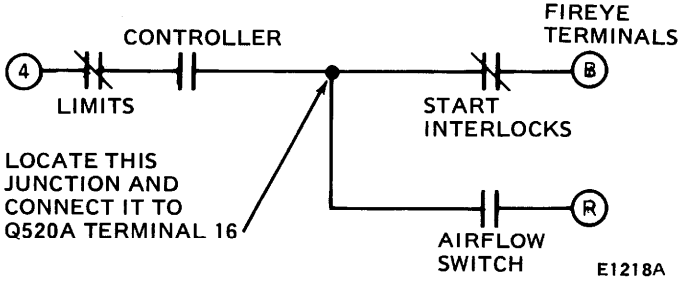
2 FOR 25RU8-6560 AND 26RJ8-6060, 6160 JUMPER Q520 TERMINALS 15 TO 8. FOR 25RU8-6570, 6580 AND 26RJ8-6070, 6080 LOCATE LOW FIRE PROVING SWITCH WIRE ON FIREYE TERMINAL W AND CONNECT TO Q520 TERMINAL 8.

E1217B

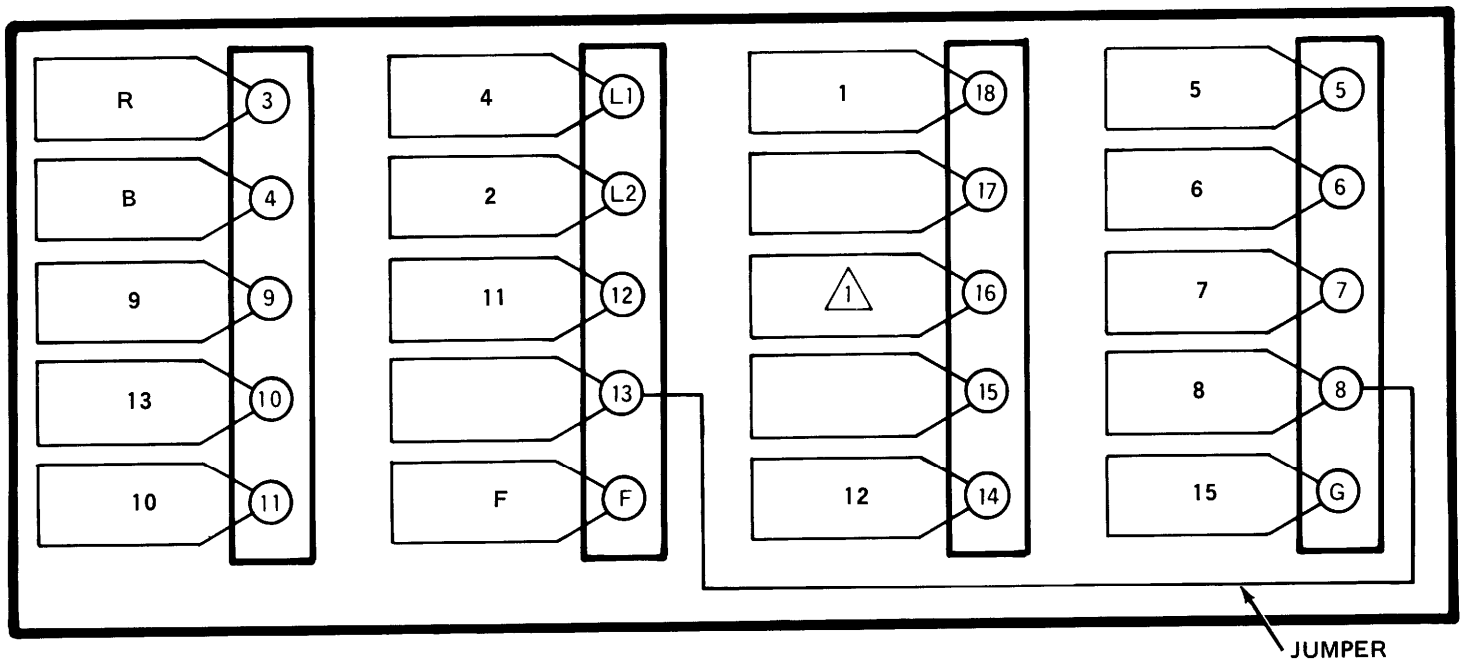
FIREYE 29RF5 1001, 1009, 6009 TO BC7000L + PM720G2013



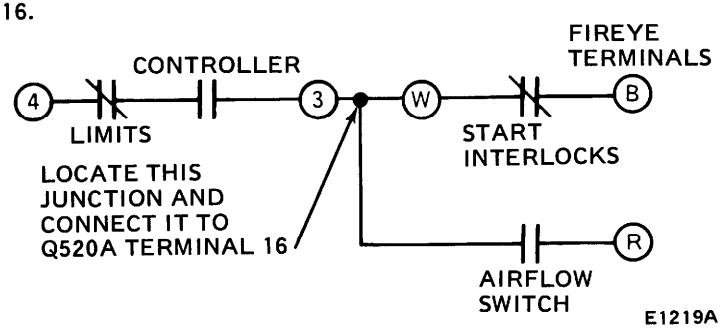
1 CONNECT WIRES FROM FIREYE TERMINALS 3 AND W TOGETHER WITH A WIRE NUT. IF START INTERLOCK IS NOT USED JUMPER Q520 TERMINALS 4 TO 16. IF START INTERLOCK IS USED LOCATE JUNCTION POINT (see diagram) AND CONNECT IT TO Q520 TERMINAL 16. THE START INTERLOCK NOW BECOMES A PREIGNITION INTERLOCK.



26RJ8 6058, 6066, 6068
25RU8 6558, 6566 TO BC7000L + PM720G2005

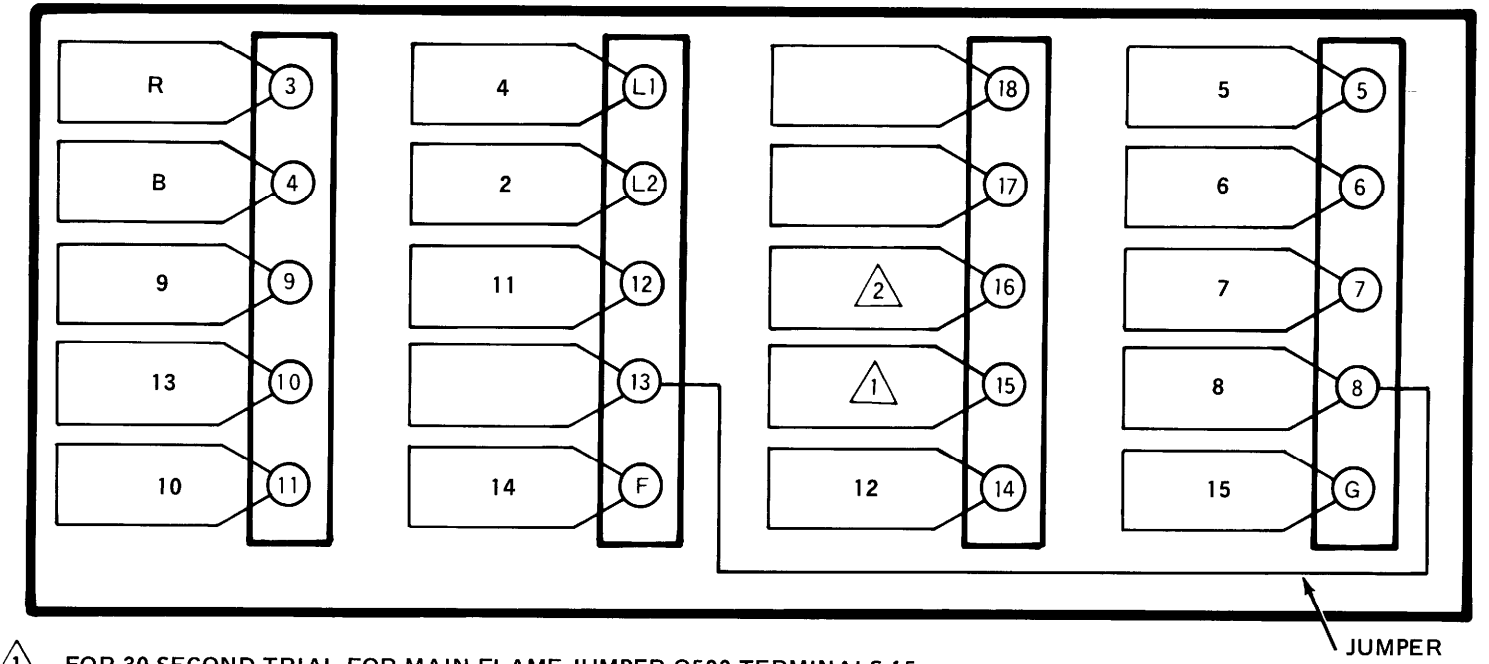


1 CONNECT WIRES FROM FIREYE TERMINALS 3 AND W TOGETHER WITH A WIRE NUT AND CONNECT TO Q520A TERMINAL 16. IF START START INTERLOCK IS USED REPLACE IT WITH A PRE-IGNITION INTERLOCK. CONNECT PRE-IGNITION INTERLOCK BETWEEN Q520A TERMINALS 4 AND 16 (see diagram). IF START OR PREIGNITION INTERLOCKS ARE NOT USED JUMPER Q520 TERMINALS 4 AND 16.



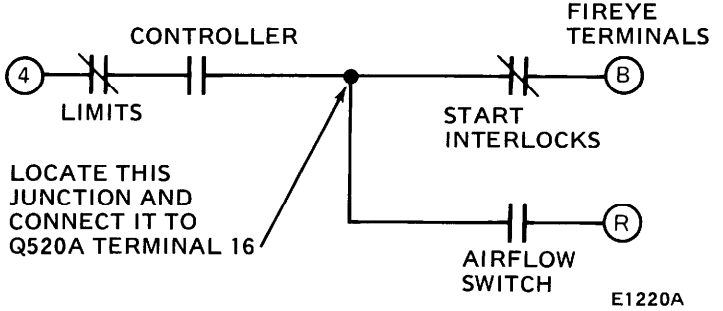
FIREYE 26RJ8 1002, 1003, 1008, 1011, 1018, 6008, 6018
29RF5 1000, 1002, 1005, 1015, 1104
29RF5 6015

TO BC7000L + PM720G2005



1 FOR 30-SECOND TRIAL FOR MAIN FLAME JUMPER Q520 TERMINALS 15 TO 8.

2 CONNECT WIRES FROM FIREYE TERMINALS 3 AND W TOGETHER WITH A WIRE NUT. IF START INTERLOCK IS NOT USED JUMPER Q520 TERMINALS 4 TO 16. IF START INTERLOCK IS USED LOCATE JUNCTION POINT (see diagram) AND CONNECT IT TO Q520 TERMINAL 16. THE START INTERLOCK NOW BECOMES A PREIGNITION INTERLOCK.



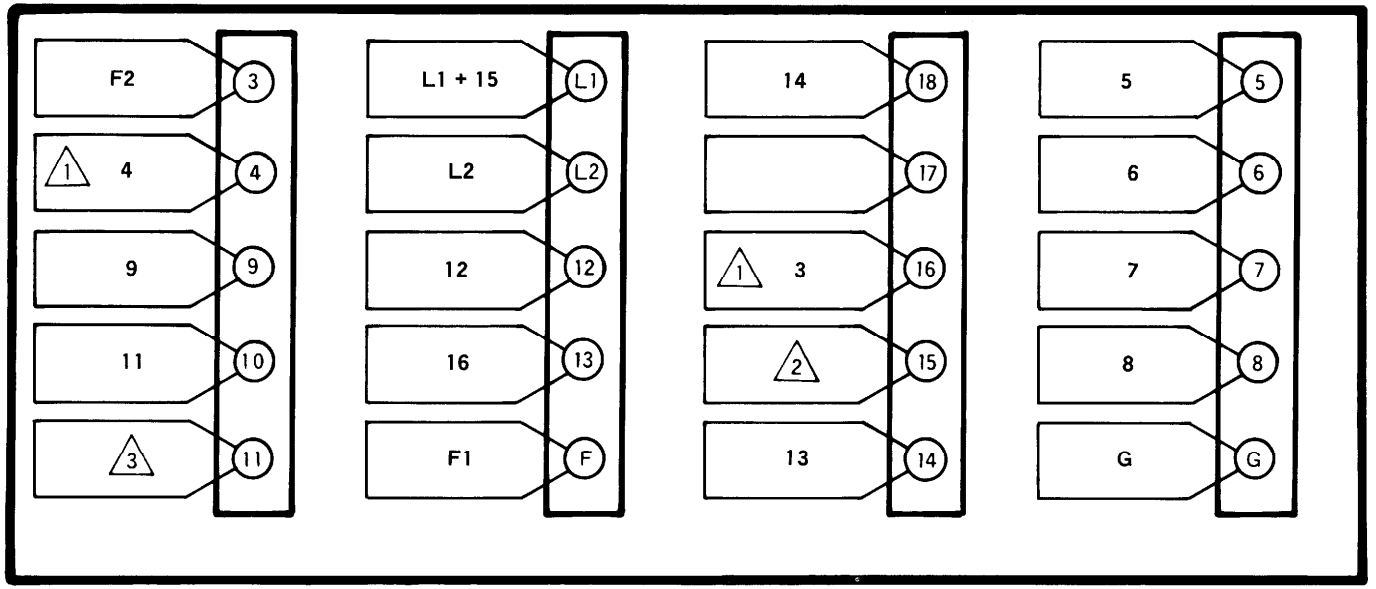
SECTION III

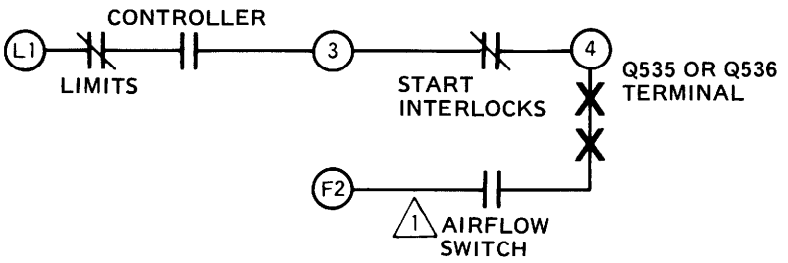
HONEYWELL R4126, R4127, R4181 CONTROLS
120 V ONLY

DIRECTIONS:

1. Disconnect all power to programmer.
2. Remove old programmer from subbase (trade-in to Honeywell Authorized Flame Safeguard Distributor).
3. Mark all wires on subbase; i.e., wires connected to terminal “D” should be marked “D.” Disconnect wires as they are marked.
4. Remove old subbase.
5. Mount Q520A subbase.
6. Connect wires to subbase per attached cross reference. Pay close attention to footnotes. For example: To convert an R4126A1172 to a BC7000, the wire marked “F2” would connect to terminal #3 on the Q520. The wire marked “3” would connect to Q520 terminal #14.
7. The symbol “  ” designates a footnote. Study these footnotes carefully.
8. Plug in the BC7000. Make sure you select the proper amplifier, detector and program module for the application.

R4126A1172, 1180,1198 TO BC7000L + PM720L2004





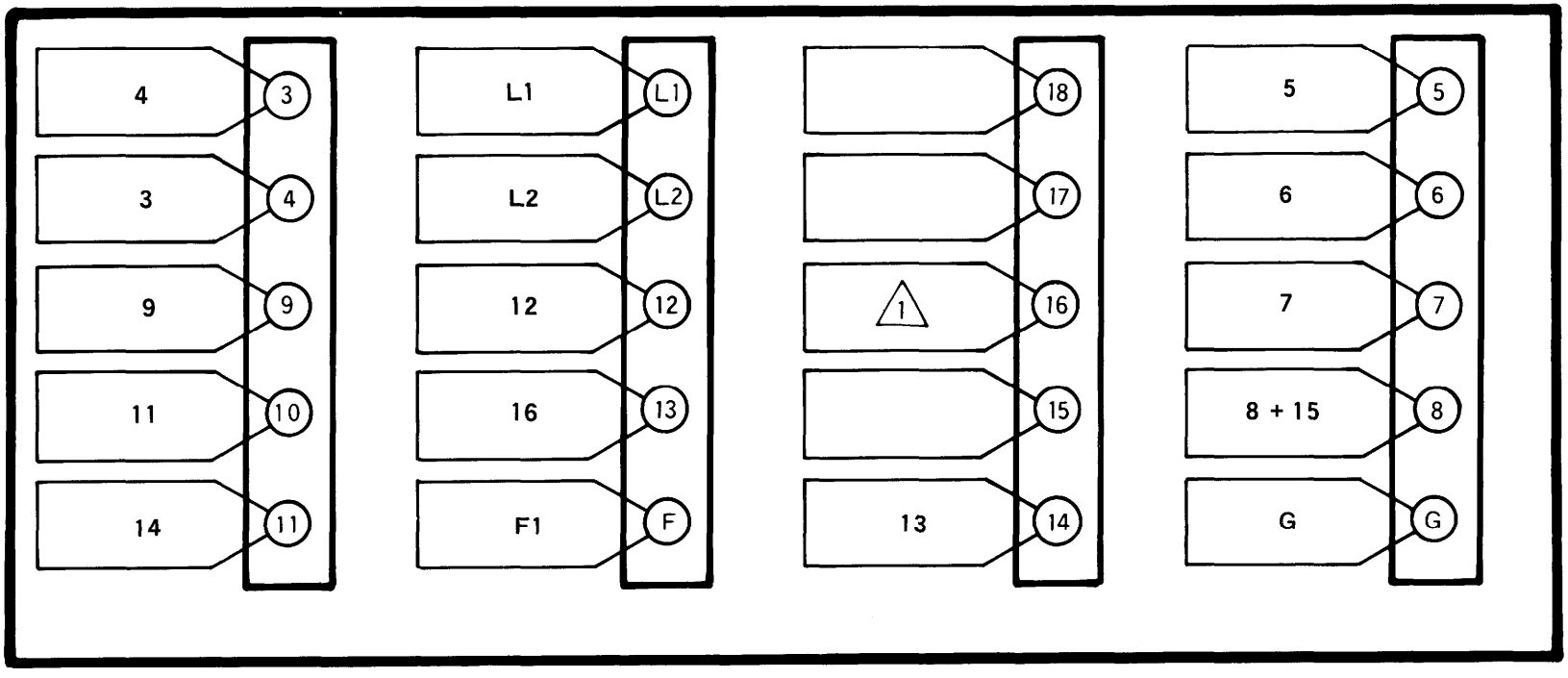
1. IDENTIFY AND REMOVE LOCKOUT INTERLOCKS (airflow switch) CIRCUIT WIRE FROM Q536 SUBBASE TERMINAL 4 AND CONNECT TO Q520A TERMINAL 16 (see diagram).

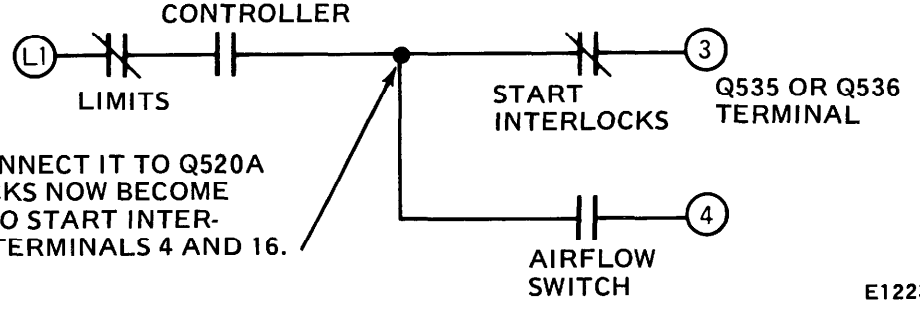
2. THE HIGH FIRE SWITCH, IF USED, IS CONNECTED BETWEEN Q535 OR Q536 TERMINALS L1 AND 15. THE WIRE FROM THE HIGH FIRE SWITCH TO TERMINAL L1 MUST BE IDENTIFIED, DISCONNECTED, AND RECONNECTED TO Q520A TERMINAL 15.

3. A. TO USE EXISTING GROUNDED MODULATING CIRCUIT, JUMPER Q520A TERMINALS 11 AND G.
   B. IF AN ISOLATED (not grounded) MODULATING CIRCUIT IS DESIRED, IDENTIFY THE WIRE CONNECTED BETWEEN MODUTROL MOTOR TERMINAL R AND Q535 OR Q536 TERMINAL G. DISCONNECT THE WIRE FROM Q535 OR Q536 TERMINAL G, AND RECONNECT IT TO Q520A TERMINAL 11.

E1222A

R4126A1008, 1016, 1024, 1032, 1040, 1057, 1081, 1149
R4126B1006, 1014, 1022 **TO BC7000L + PM720G2005**

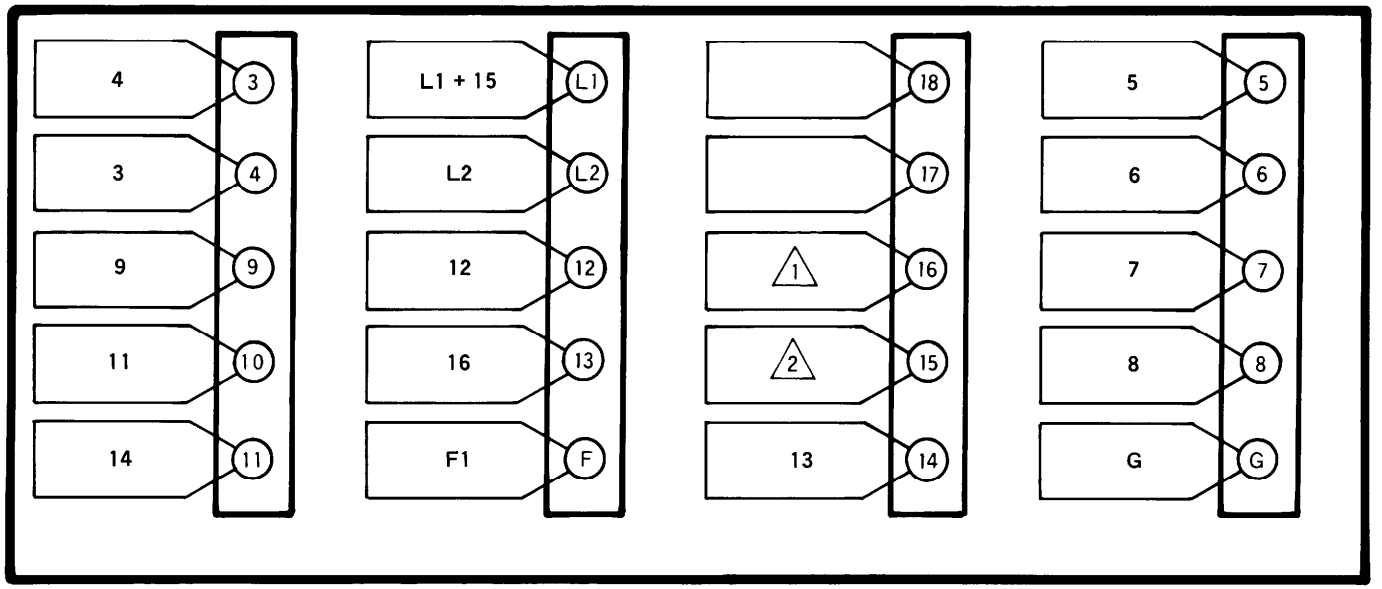


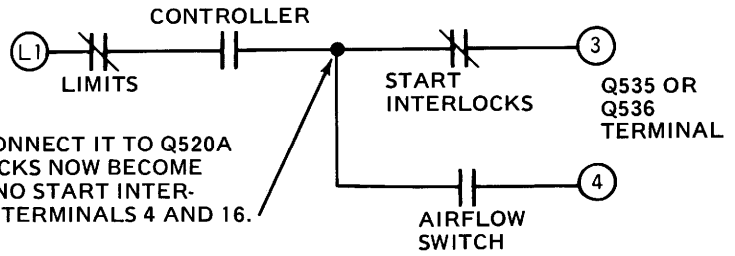


1 LOCATE THIS JUNCTION AND CONNECT IT TO Q520A TERMINAL 16. START INTERLOCKS NOW BECOME PREIGNITION INTERLOCKS. IF NO START INTERLOCKS ARE USED JUMPER Q520 TERMINALS 4 AND 16.

E1223A

R4126A1073,1164 TO BC7000L + PM720L2004



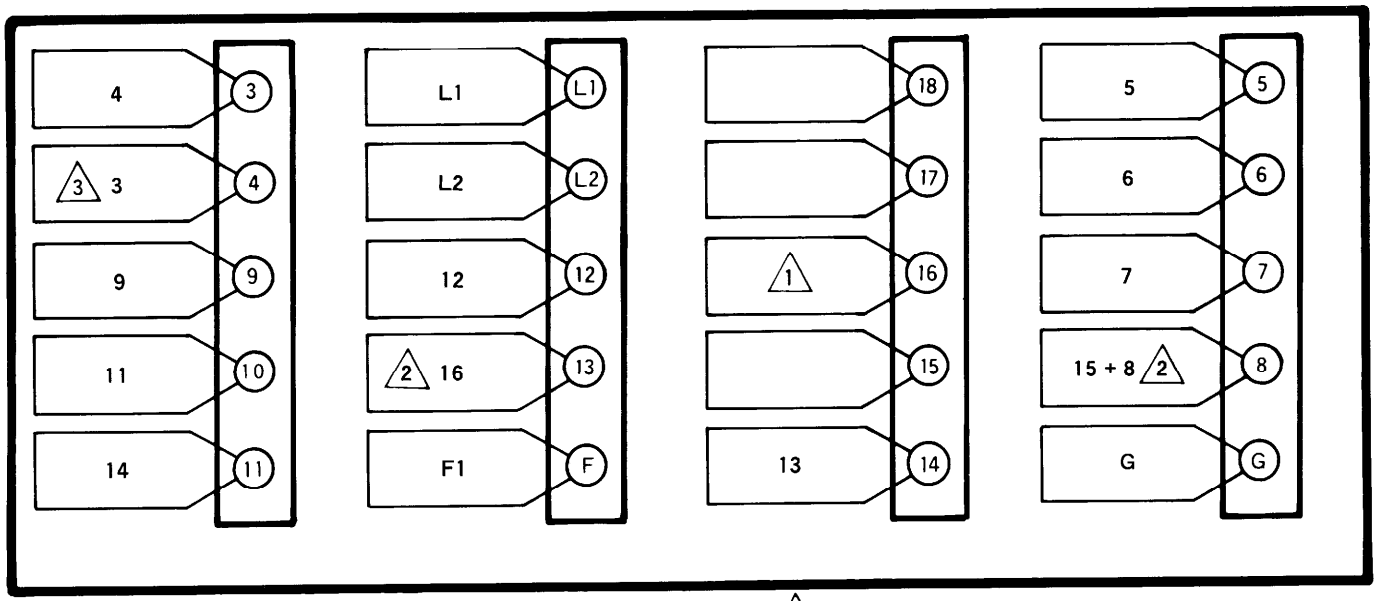


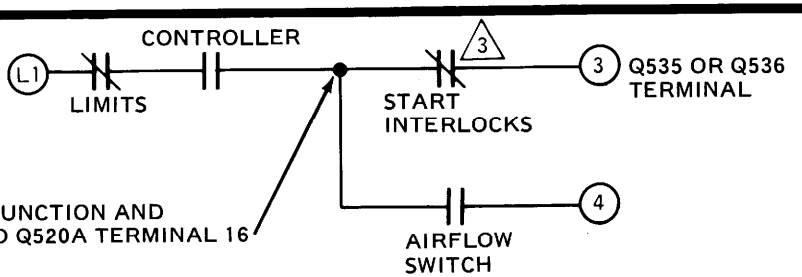
1 LOCATE THIS JUNCTION AND CONNECT IT TO Q520A TERMINAL 16. START INTERLOCKS NOW BECOME PREIGNITION INTERLOCKS. IF NO START INTERLOCKS ARE USED JUMPER Q520 TERMINALS 4 AND 16.

2 THE HIGH FIRE SWITCH, IF USED, IS CONNECTED BETWEEN Q535 OR Q536 TERMINALS L1 AND 15. THE WIRE FROM THE HIGH FIRE SWITCH TO TERMINAL L1 MUST BE IDENTIFIED, DISCONNECTED, AND RECONNECTED TO Q520A TERMINAL 15. IF NO HIGH FIRE SWITCH IS USED, Q535 OR Q536 TERMINALS L1 AND 15 ARE JUMPERED. REMOVE THE JUMPER FROM Q535 OR Q536 TERMINAL L1 AND RECONNECT IT TO Q520A TERMINAL 15.

E1224A

R4127A1155 AND R4127A1197 TO BC7000L + PM720G2005





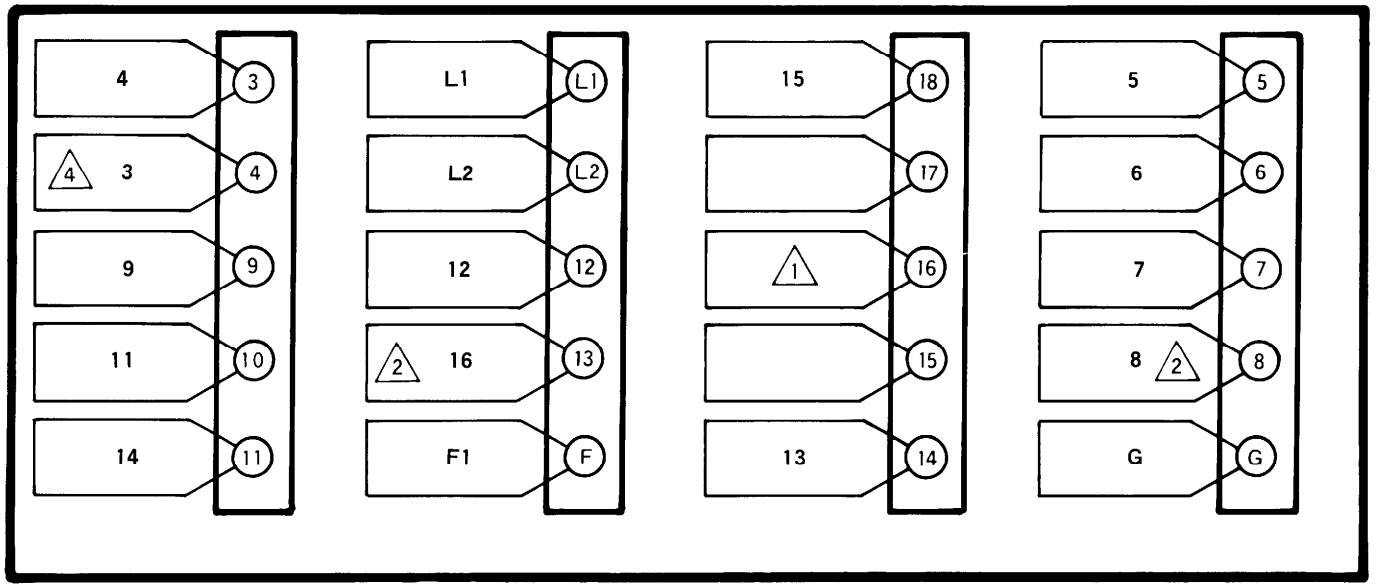
1 LOCATE THIS JUNCTION AND CONNECT IT TO Q520A TERMINAL 16

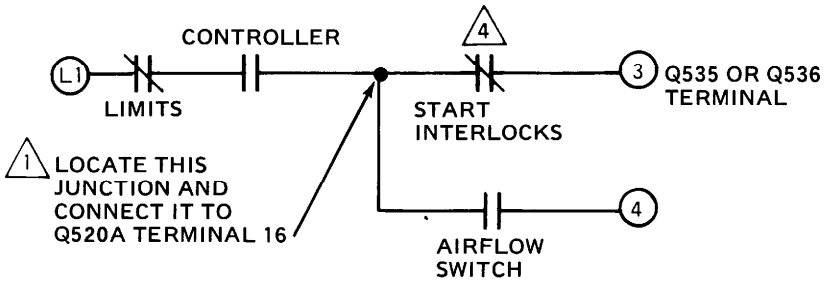
2 IF NO LOW FIRE PROVING SWITCH IS USED, JUMPER Q520A TERMINALS 8 TO 13.

3 REPLACE START INTERLOCK WITH PREIGNITION INTERLOCK. CONNECT PREIGNITION INTERLOCK BETWEEN Q520A TERMINALS 4 AND 16. IF NO PREIGNITION INTERLOCK IS USED, JUMPER Q520A TERMINALS 4 AND 16.

E1753

R4127 (ALL MODELS) EXCEPT R4127A1171, R4127A1155, R4127A1197, R4127B1039, AND R4127B1047 TO BC7000L + PM720Gi △3





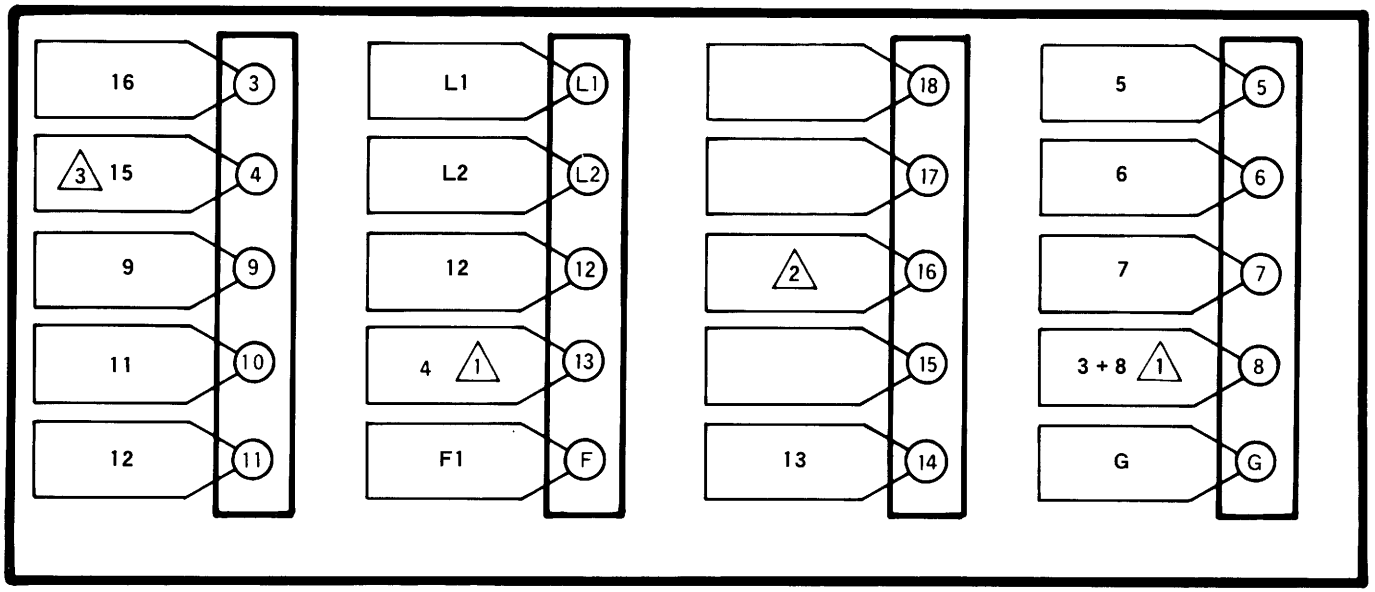
△2 IF NO LOW FIRE PROVING SWITCH IS USED, JUMPER Q520A TERMINALS 8 TO 13.

△3 USE PM720G2005 WHEN REPLACING THE R4127A1056, 1080, 1122 AND 1148. USE PM720G1013 WHEN REPLACING ALL OTHERS.

△4 REPLACE START INTERLOCK WITH PRE-IGNITION INTERLOCK. CONNECT PRE-IGNITION INTERLOCK BETWEEN Q520A TERMINALS 4 AND 16. IF NO START INTERLOCKS ARE USED JUMPER Q520 TERMINALS 4 AND 16.

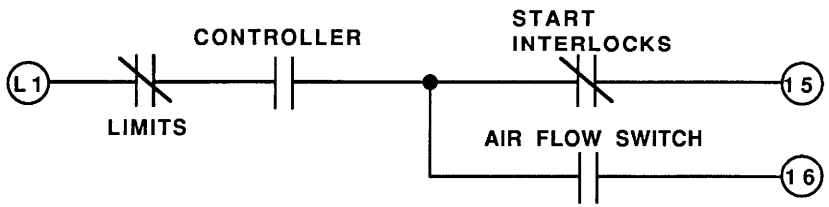
E1225A

R4127A1171/R4127B1039/R4127B1047 TO BC7000L+PM720G2005



1 ON R4127B1039, R4127B1047 AND R4127B1054 JUMPER Q520 TERMINAL 8 TO 13.

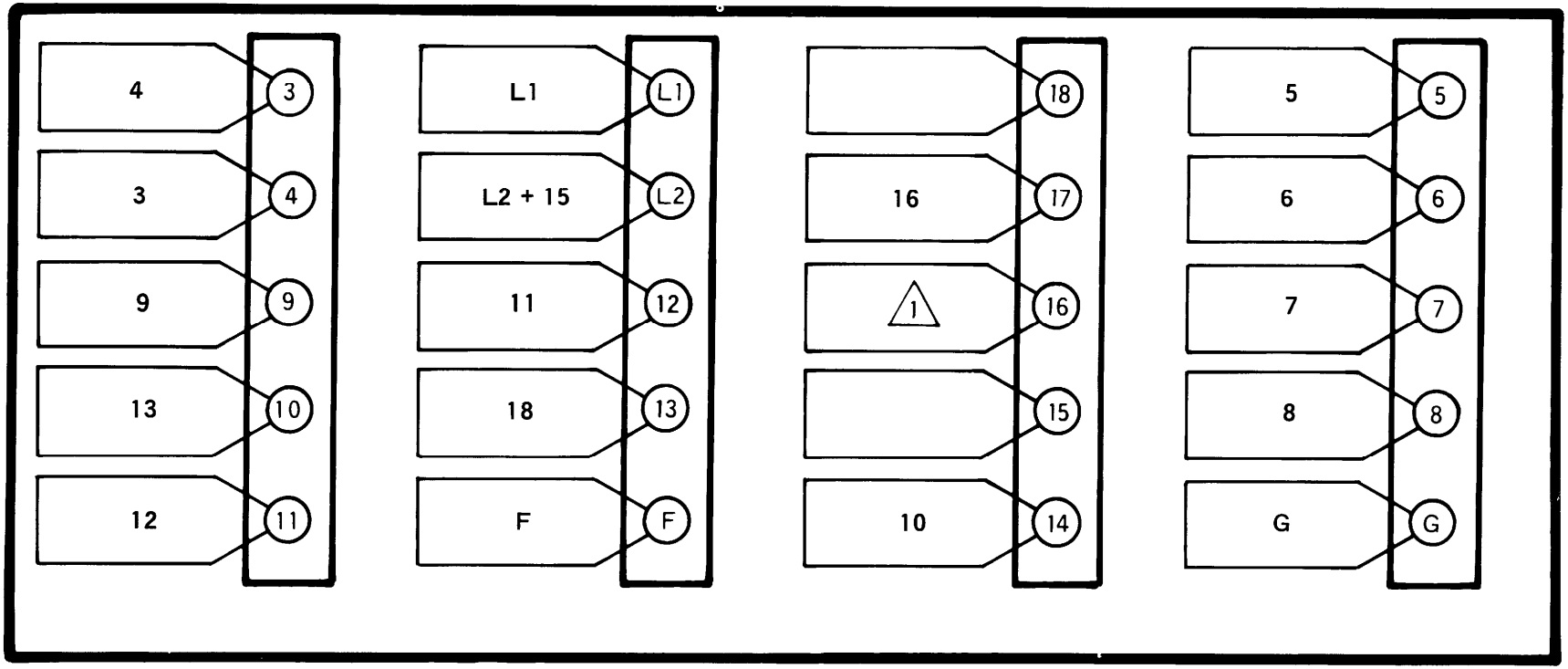
2 LOCATE THIS JUNCTION AND CONNECT IT TO TERMINAL 16.

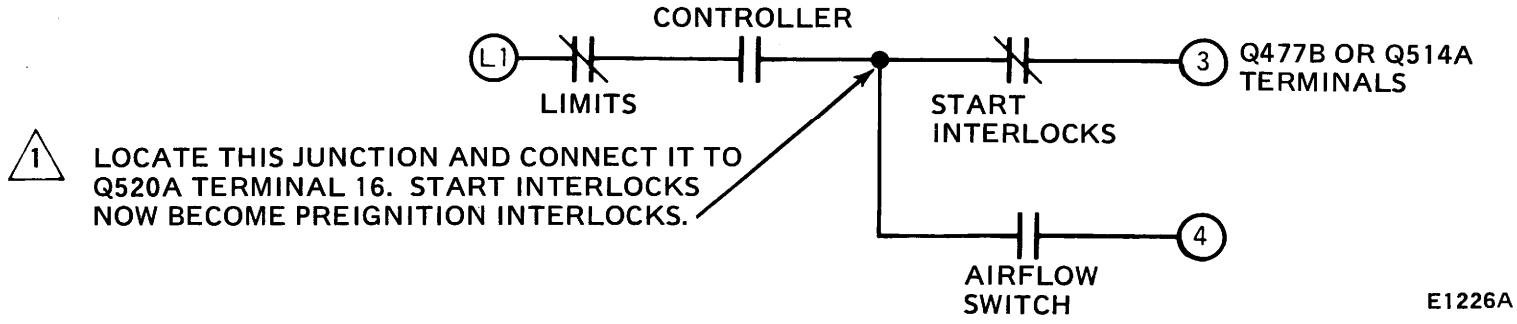


3 REPLACE START INTERLOCK WITH PRE-IGNITION INTERLOCK. CONNECT PRE-IGNITION INTERLOCK BETWEEN Q520A TERMINALS 4 AND 16; IF NO START INTERLOCKS ARE USED JUMPER Q520A TERMINALS 4 AND 16.

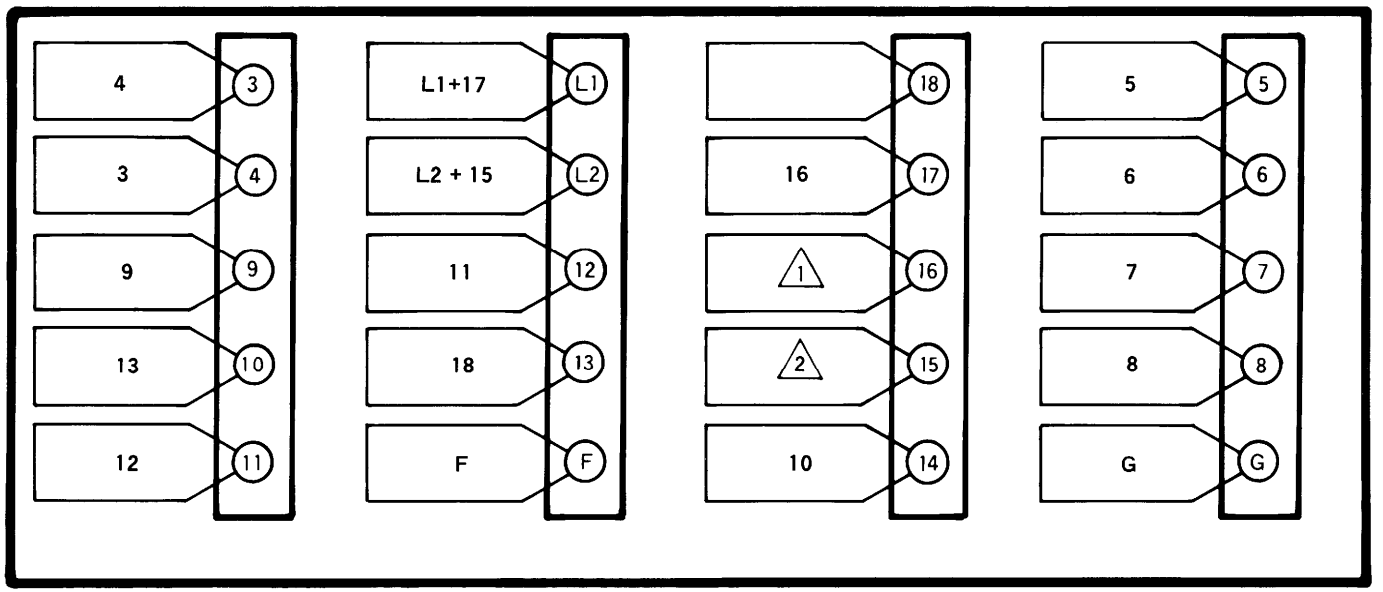
E1724A

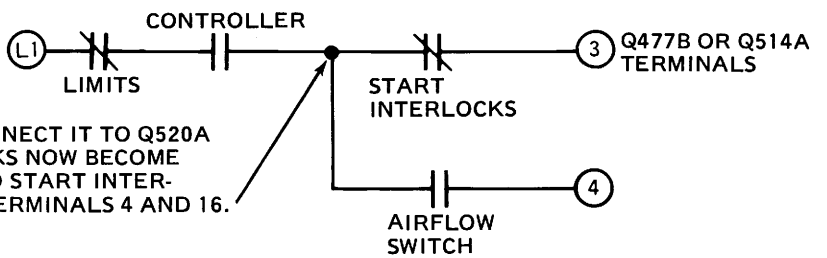
R4181A1000, R4181A1026 TO BC7000L + PM720G2005





R4181A1018, R4181A1034 TO BC7000L + PM720L2004



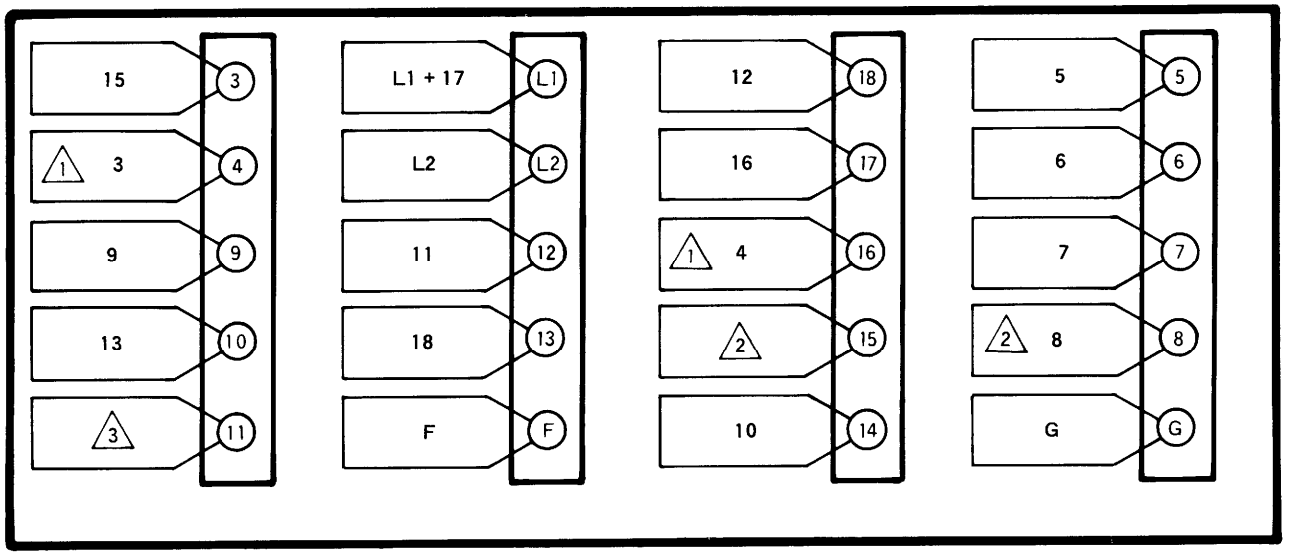


1 LOCATE THIS JUNCTION AND CONNECT IT TO Q520A TERMINAL 16. START INTERLOCKS NOW BECOME PREIGNITION INTERLOCKS. IF NO START INTERLOCKS ARE USED JUMPER Q520 TERMINALS 4 AND 16.

2 THE HIGH FIRE SWITCH, IF USED, IS CONNECTED BETWEEN Q477B OR Q514A TERMINALS L1 AND 17. THE WIRE FROM THE HIGH FIRE SWITCH TO TERMINAL L1 MUST BE IDENTIFIED, DISCONNECTED, AND RECONNECTED TO Q520A TERMINAL 15. IF NO HIGH FIRE SWITCH IS USED, Q477B OR Q514A TERMINALS L1 AND 17 ARE JUMPERED. REMOVE THE JUMPER FROM Q477B OR Q154A TERMINAL L1 AND RECONNECT IT TO Q520A TERMINAL 15.

E1227A

R4181A1042, R4181A1059 TO BC7000L + PM720L2004



1. IDENTIFY AND REMOVE CONTROLLER AND LIMIT CIRCUIT WIRE FROM Q477B (OR Q514A) SUBBASE TERMINAL 3 AND RECONNECT TO Q520A TERMINAL 16. REMAINING WIRES (PREIGNITION INTERLOCK CIRCUIT WIRE) SHOULD BE CONNECTED TO Q520A TERMINAL 4.

2. IDENTIFY AND REMOVE HIGH FIRE PROVING SWITCH WIRE FROM Q477B TERMINAL 8 AND CONNECT IT TO Q520A TERMINAL 15.

3. A. TO USE EXISTING GROUNDED MODULATING CIRCUIT, JUMPER Q520A TERMINALS 11 AND G.
   B. IF AN ISOLATED (not grounded) MODULATING CIRCUIT IS DESIRED, IDENTIFY THE WIRE CONNECTED BETWEEN MODUTROL MOTOR TERMINAL R AND Q535 OR Q536 TERMINAL G. DISCONNECT THE WIRE FROM Q535 OR Q536 TERMINALG, AND RECONNECT IT TO Q520A TERMINAL 11.

E1228A

SECTION IV

HONEYWELL R4140 AND R4150, 20 TERMINAL SUBBASE 120 V ONLY

NOTE: This cross reference does not include conversions for proprietary controls such as Cleaver Brooks, Vapor or Peabody Gordon Piatt models.

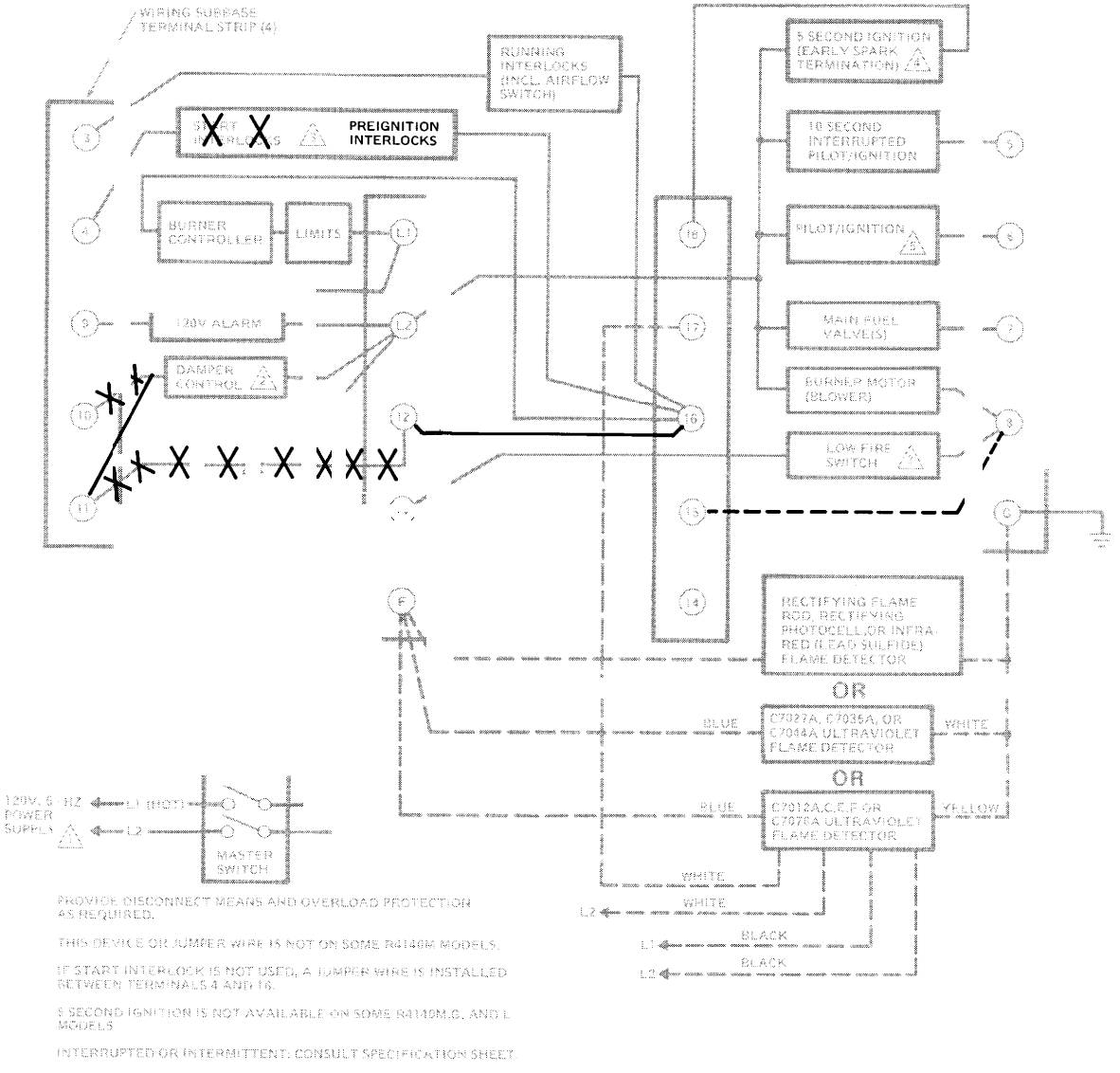
Preignition Interlock Models:

R4140G1007
R4140G1015
R4140G1106
R4140G1130
R4140G1148
R4140L All Models
R4140M1145
R4140M1152
R4140M1160
R4140M1 178
R4150G1186
R4150L All Models

All others have start interlocks.

If existing R4150 has 13- or 15-terminal subbase, the subbase must be replaced with a 20 terminal Q520A. See Section V.

REPLACING AN R4140M OR R4150M WITH START INTERLOCKS WITH A BC7000L/PM720M2002



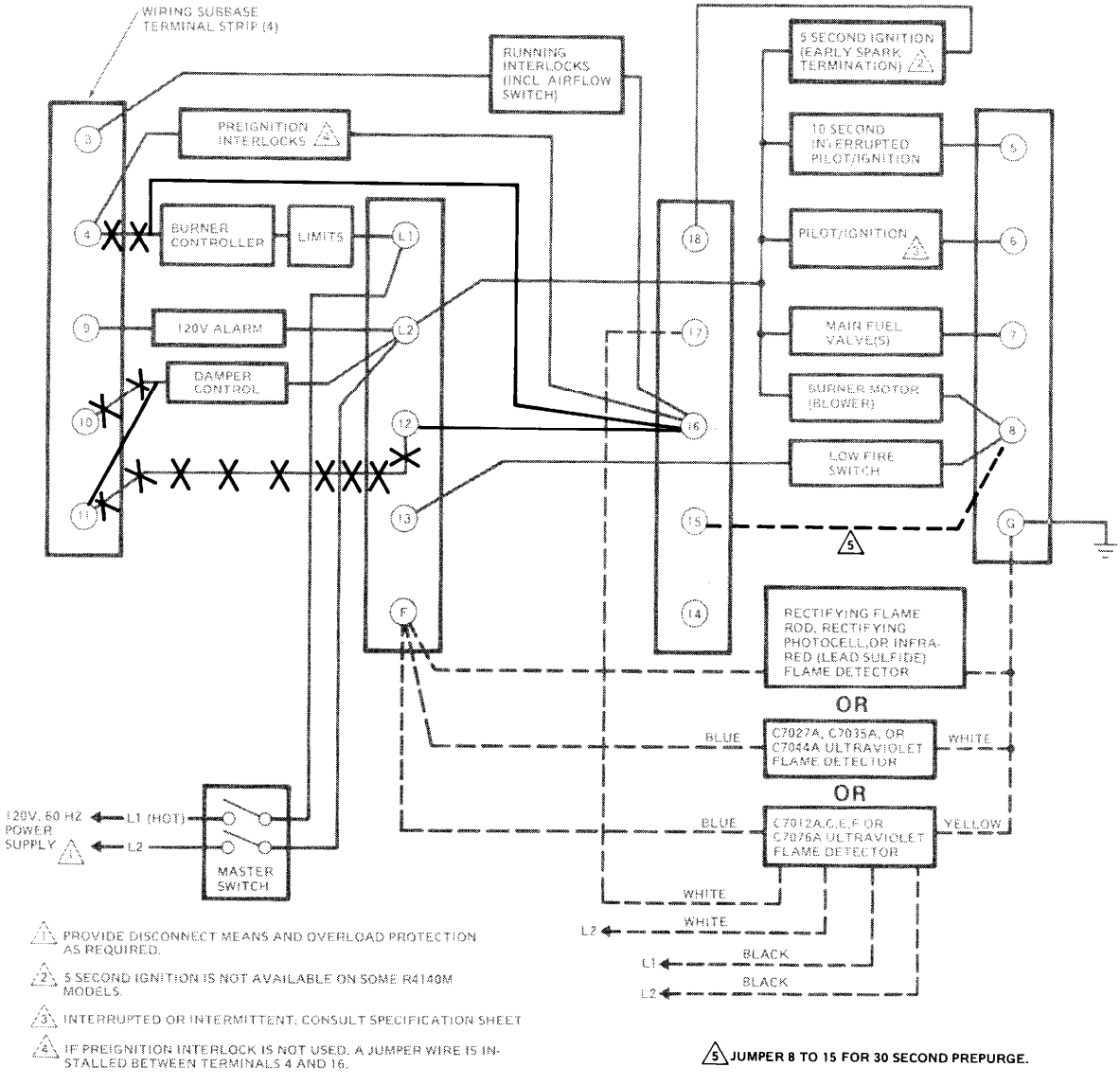
BC7000L/PM720M2002

STEPS FOR CONVERSION

1. START INTERLOCKS BECOME PREIGNITION INTERLOCKS.
2. DISCONNECT DAMPER CONTROL WIRE FROM TERMINAL 10 CONNECT IT TO TERMINAL 11.
3. REMOVE JUMPER FROM TERMINAL BETWEEN TERMINAL 11 AND 12 (on some models).
4. IF LOW FIRE SWITCH IS NOT USED, CONNECT JUMPER WIRE BETWEEN TERMINALS 8 AND 13.
5. JUMPER 8 TO 15 FOR 30-SECOND PREPURGE.
6. IF OLD CONTROL HAD 12 TO 11 JUMPERED, ADD A JUMPER FROM 12 TO 16.

E1235B

REPLACING AN R4140M OR R4150M WITH PREIGNITION INTERLOCKS WITH A BC7000L/PM720M2002



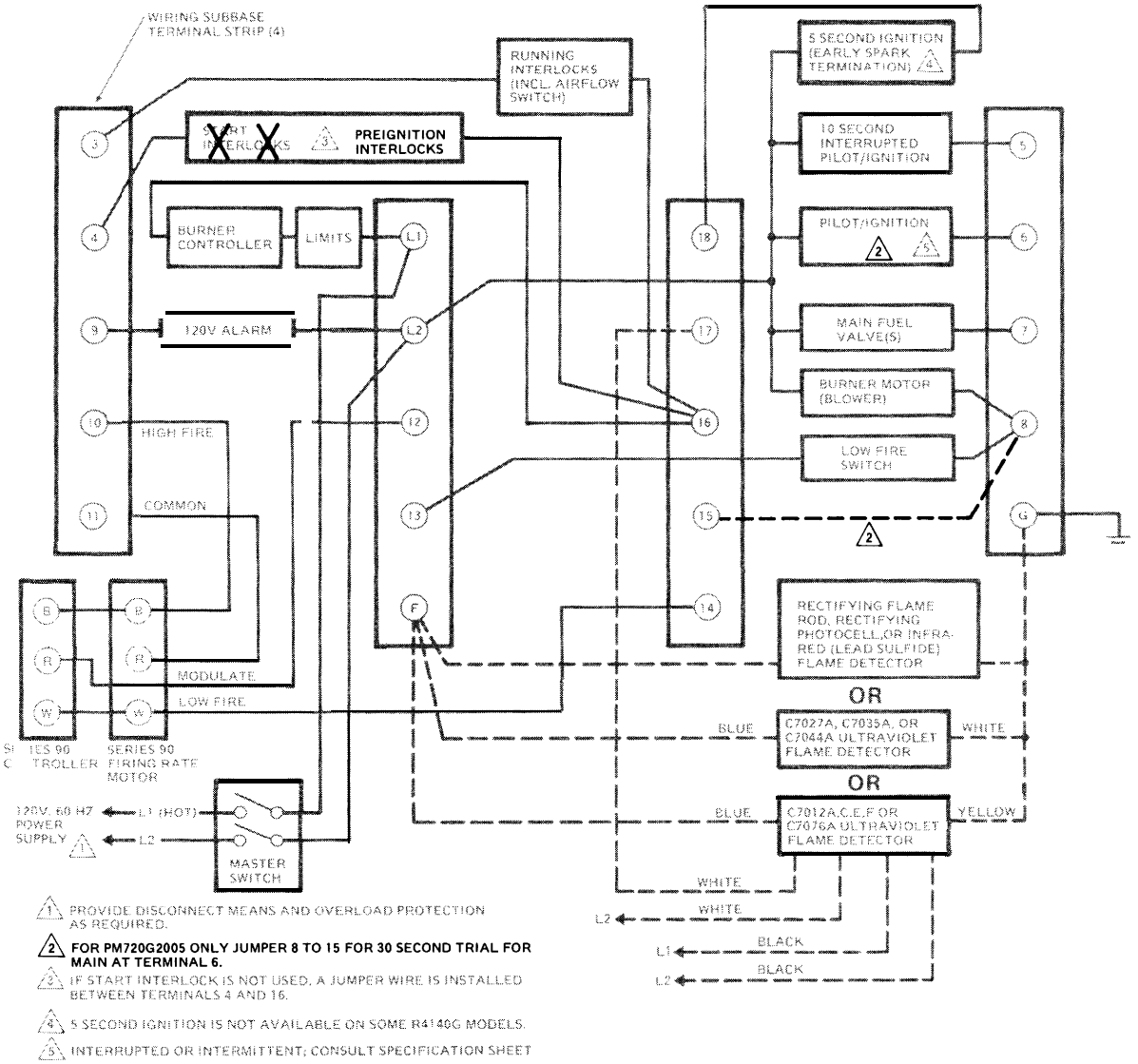
BC7000L/PM720M2002

STEPS FOR CONVERSION

1. IDENTIFY AND REMOVE BURNER CONTROLLER AND LIMITS CIRCUIT WIRE FROM TERMINAL 4 AND CONNECT TO TERMINAL 16
2. DISCONNECT DAMPER CONTROL WIRE FROM TERMINAL 10 AND CONNECT IT TO TERMINAL 11.
3. REMOVE JUMPER FROM TERMINAL BETWEEN TERMINAL 11 AND 12 (on some models).
4. IF LOW FIRE SWITCH IS NOT USED, CONNECT JUMPER WIRE BETWEEN TERMINALS 8 AND 13.
5. JUMPER TERMINALS 8 TO 15 FOR 30-SECOND PURGE.

E1237

REPLACING AN R4140G OR R4150G WITH START INTERLOCKS WITH A BC7000L/PM720G2005 /PM720G2013



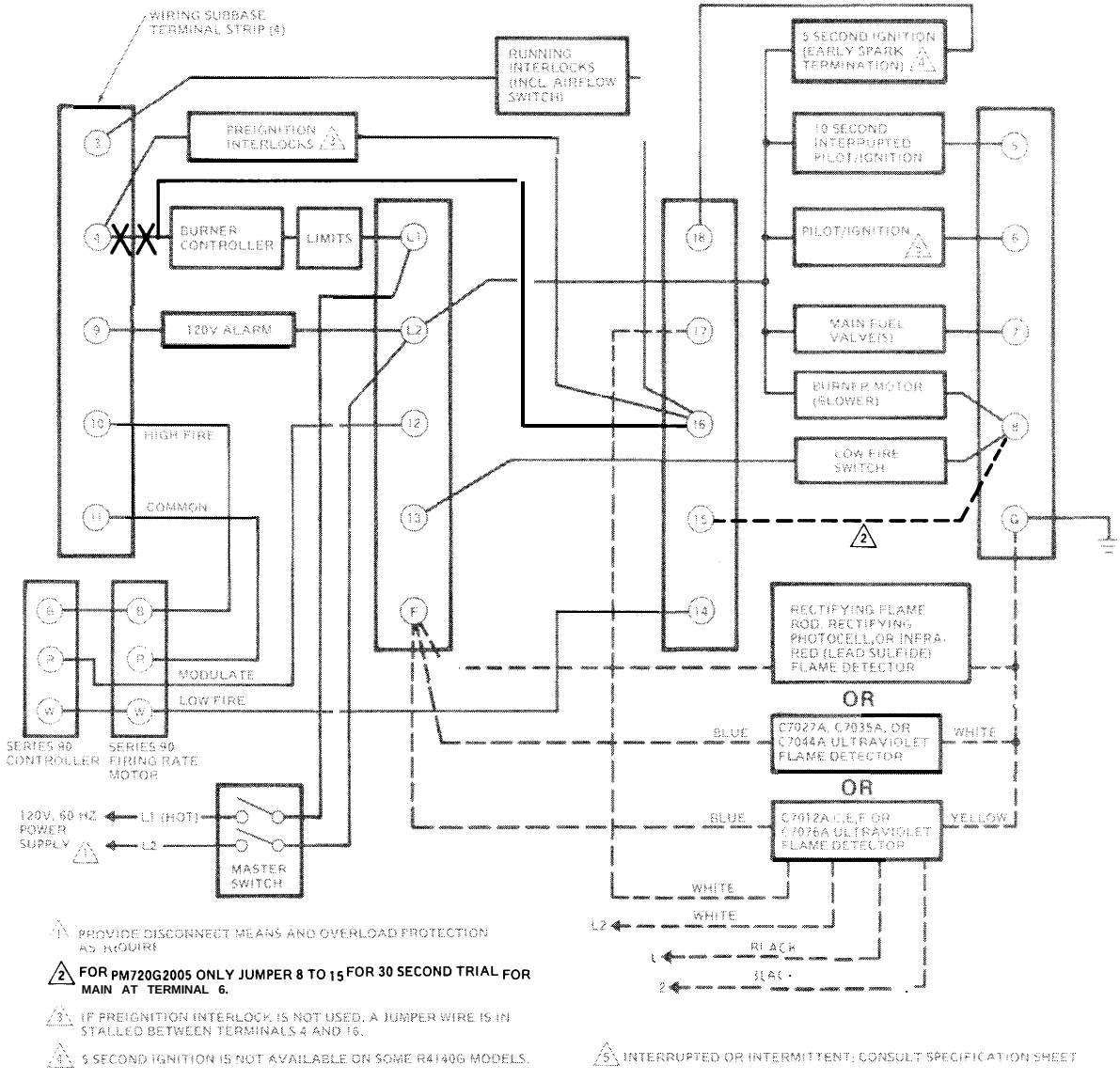
BC7000L/PM720G2005 /PM720G2013

STEPS FOR CONVERSION

1. START INTERLOCKS BECOME PREIGNITION INTERLOCKS.
2. FOR PM720G2005 ONLY JUMPER 15 TO 8 FOR 30-SECOND TRIAL FOR MAIN FLAME AT TERMINAL NO. 6.
3. TERMINAL 16 MUST BE USED ON THE BC7000. IF AN EXTERNAL TIE POINT WAS PREVIOUSLY USED ON THE R4140G OR R4150G TO BE REPLACED, IT MUST BE LOCATED AND WIRED TO TERMINAL NO. 16.
4. FOR INTERMITTENT PILOT USE PM720G2013.

E1234

REPLACING AN R4140G OR R4150G WITH PREIGNITION INTERLOCKS WITH A BC7000L/PM720G2005 /PM720G2013



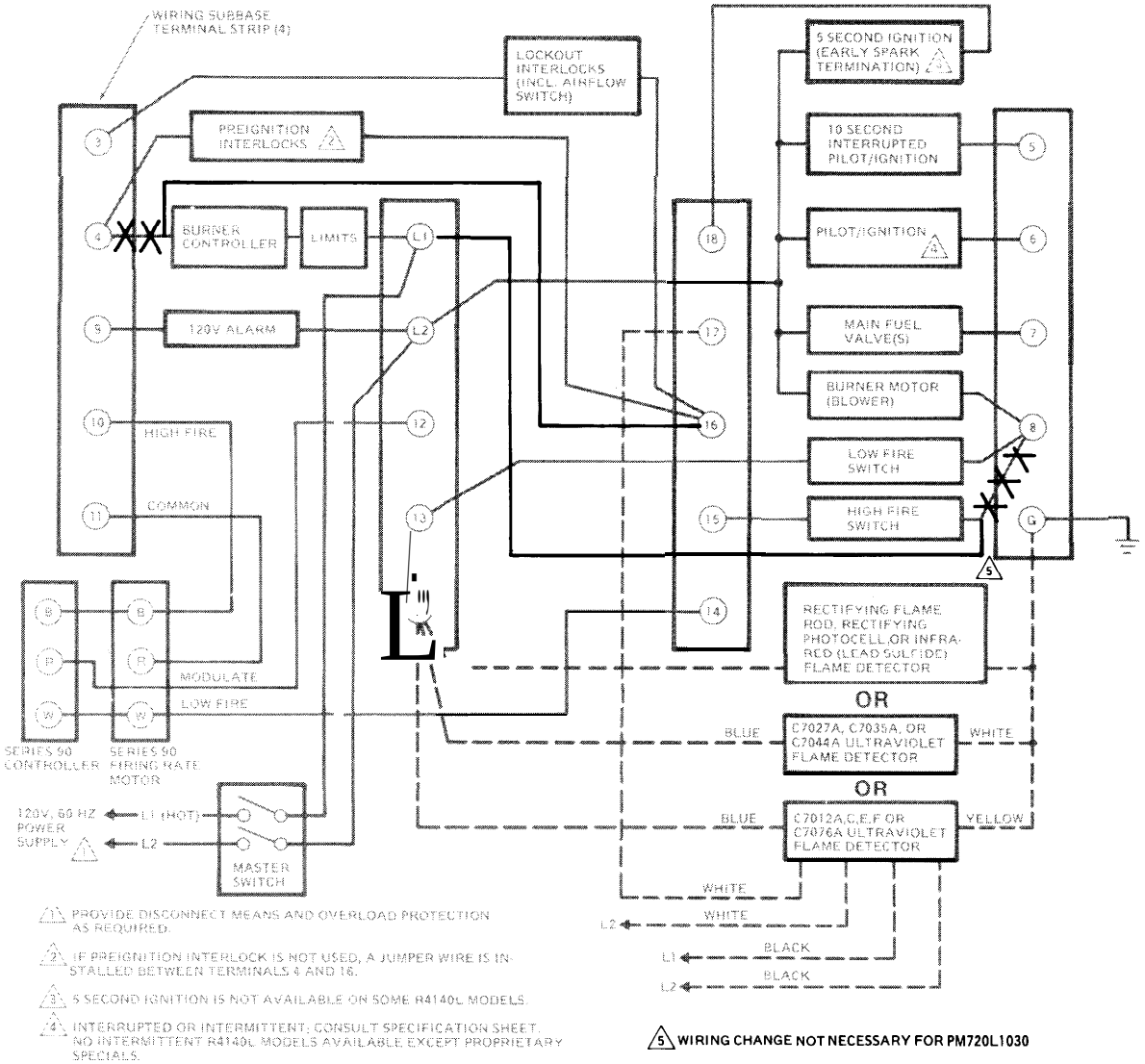
BC7000L/PM720G2005 /PM720G2013

STEPS FOR CONVERSION

1. IDENTIFY AND REMOVE BURNER CONTROLLER AND LIMITS CIRCUIT WIRE FROM TERMINAL NO. 4 ON THE Q520A SUBBASE AND CONNECT TO TERMINAL NO. 16.
2. FOR PM720G2005 ONLY, JUMPER 8 TO 15 FOR 30-SECOND TRIAL FOR MAIN FLAME AT TERMINAL 6.
3. FOR INTERMITTENT PILOT USE PM720G2013.

EI 233

REPLACING AN R4140L OR R4150L WITH A BC7000L/PM720L1030 /PM720L2004



BC7000L/PM720L1030 /PM720L2004

STEPS FOR CONVERSION

1. IDENTIFY AND REMOVE BURNER CONTROLLER AND LIMITS CIRCUIT WIRE FROM TERMINAL NO. 4 ON THE Q520A . SUBBASE AND CONNECT TO TERMINAL NO. 16.
2. IDENTIFY AND REMOVE HIGH FIRE PROVING SWITCH WIRES FROM TERMINAL NO, 8 AND CONNECT THEM TO TERMINAL L1 . (THE LOW FIRE SWITCH WIRE MAY BE CONNECTED TO TERMINAL NO. 15. REMOVE FROM TERMINAL NO. 15 AND CONNECT TO 8.)
3. FOR ENERGY SAVING PREPURGE USE PM720L2004.

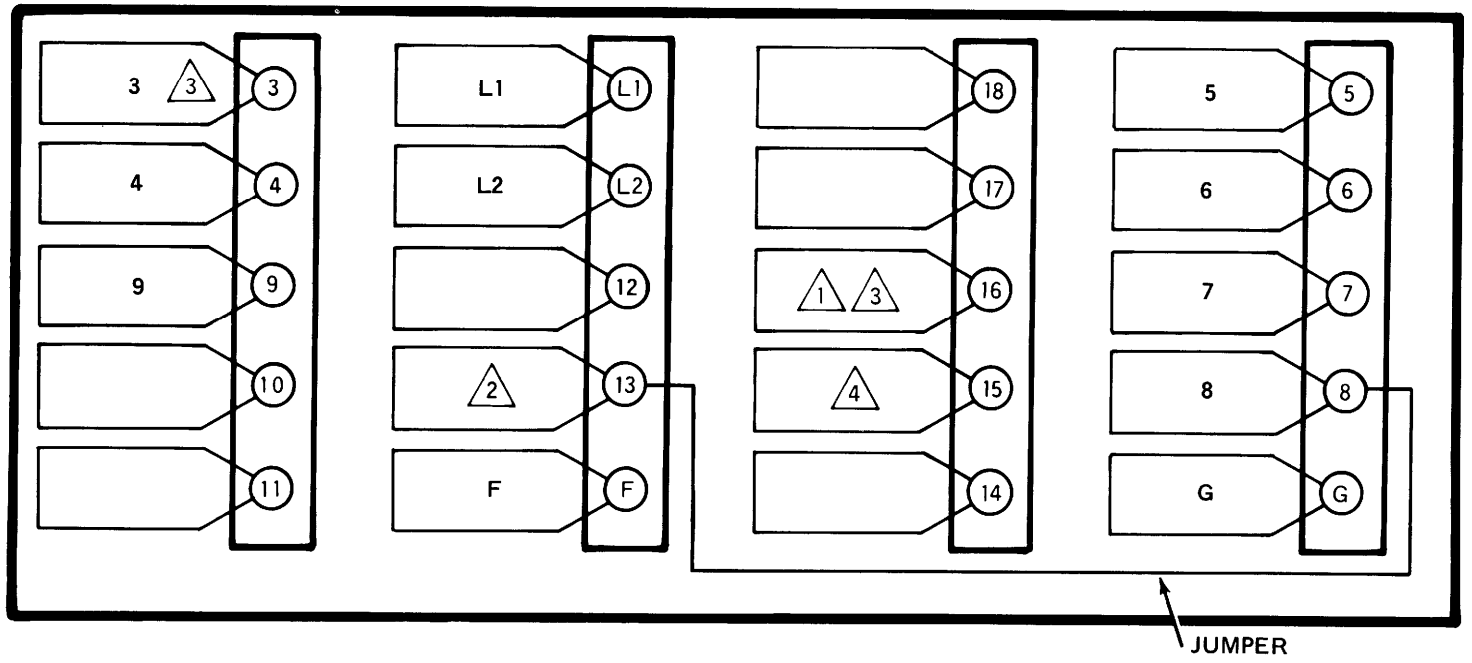
E1236A

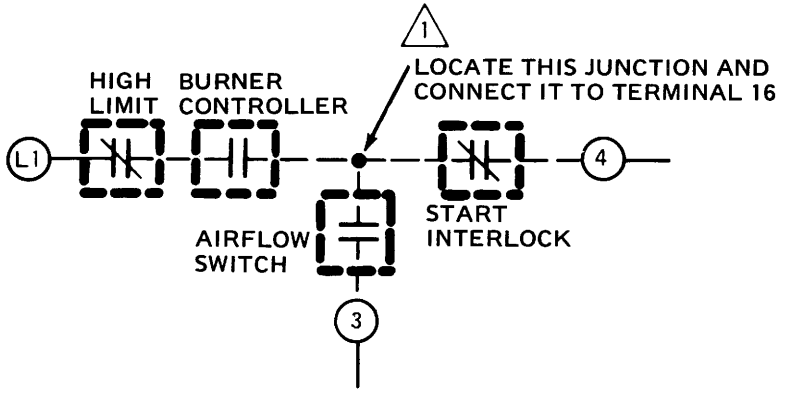
SECTION V

REPLACING R4150 MODELS WITH 13- OR 15-TERMINAL SUBBASES

1. Disconnect all power to programmer.
2. Remove R4150 from subbase (trade-in to Authorized Distributor).
3. Mark all wires on subbase; i.e., wires connected to terminal “9” should be marked “9”. Disconnect wires as they are marked.
4. Remove old subbase.
5. Install 20-terminal Q520A subbase.
6. Connect wires to subbase per attached cross reference. Pay close attention to footnotes.
7. Plug in the BC7000. Make sure you select the proper amplifier detector and program module for the application.

CONVERSION FOR R4150A, B, AND C MODELS
120 VOLT ONLY
USE BC7000L/PM720M2002





2 JUMPER TERMINAL 13 TO 8.

3 ON SOME MODELS THE AIRFLOW SWITCH IS WIRED BETWEEN TERMINALS 10 AND 11. IF THIS IS THE CASE REMOVE THE AIRFLOW SWITCH WIRES FROM TERMINALS 10 AND 11 AND CONNECT THEM TO TERMINALS 3 AND 16.

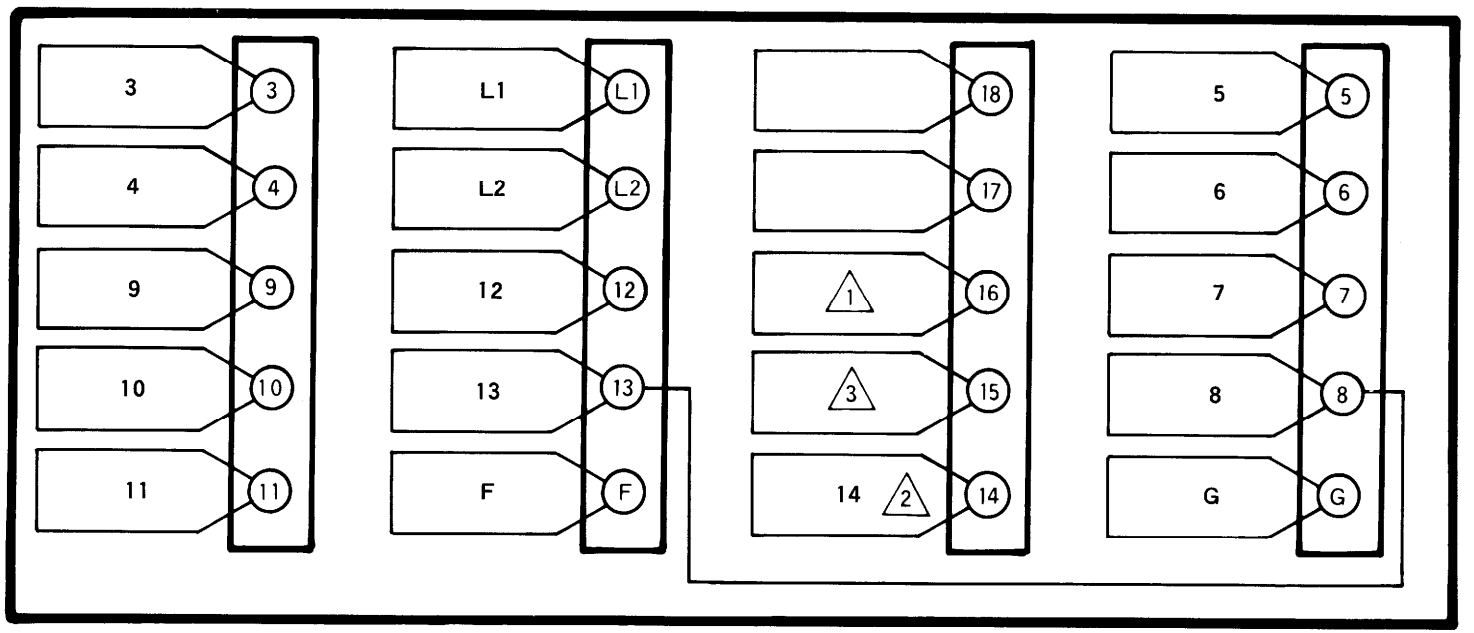
4 JUMPER TERMINALS 15 TO 8 FOR 30-SECOND PREPURGE.

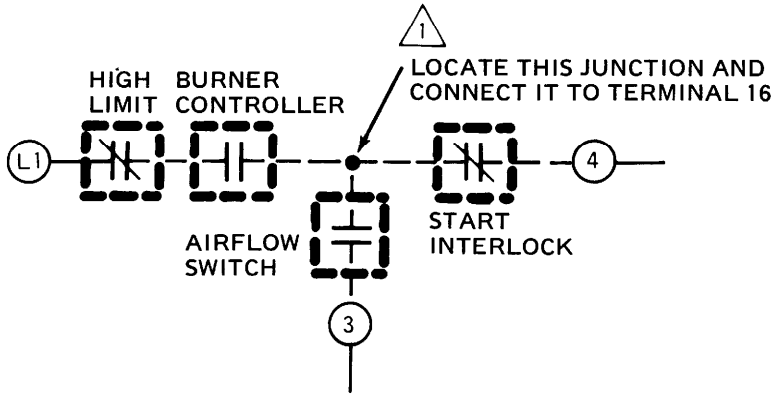
E1229A

CONVERSION FOR R4150G1004, G1020, G1046, G1103, G1111, G1145, G1178 MODELS

120 VOLT ONLY

USE BC7000L/PM720G2013



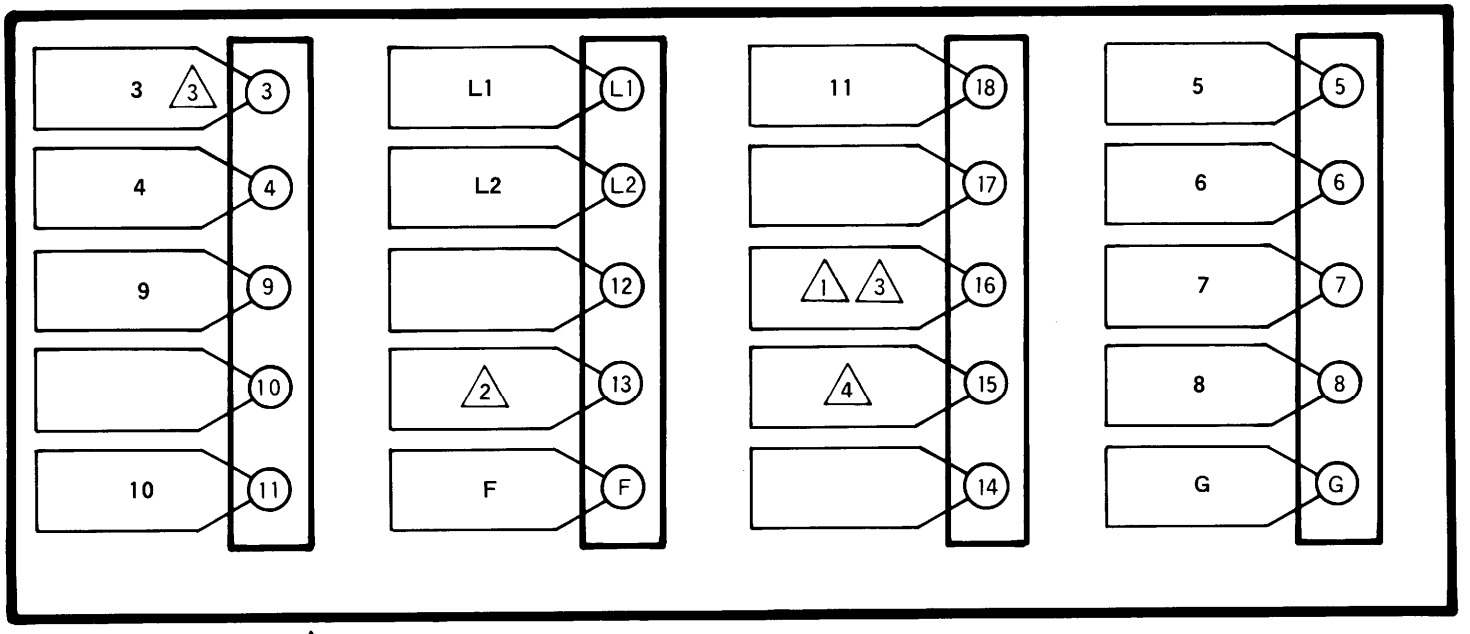


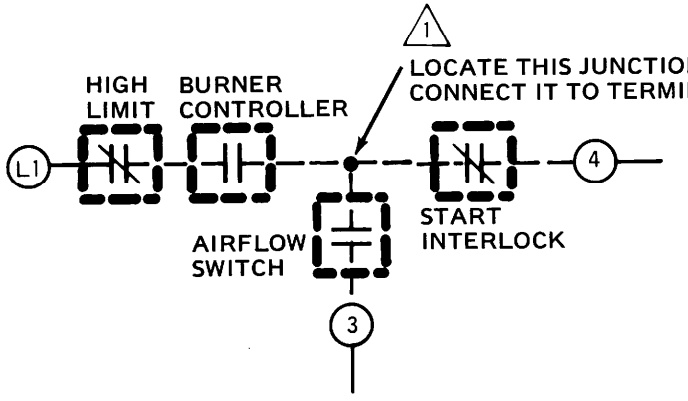
2 RUN WIRE FROM TERMINAL 14 TO TERMINAL W ON MOD MOTOR ON R4150G1004, 1046, 1103 MODELS ONLY.

3 JUMPER TERMINALS 15 TO 8 FOR 30-SECOND PREPURGE.

E1230A

CONVERSION FOR R4150G1012 AND G1079 MODELS
120 VOLT ONLY
USE BC7000L/PM720M2002





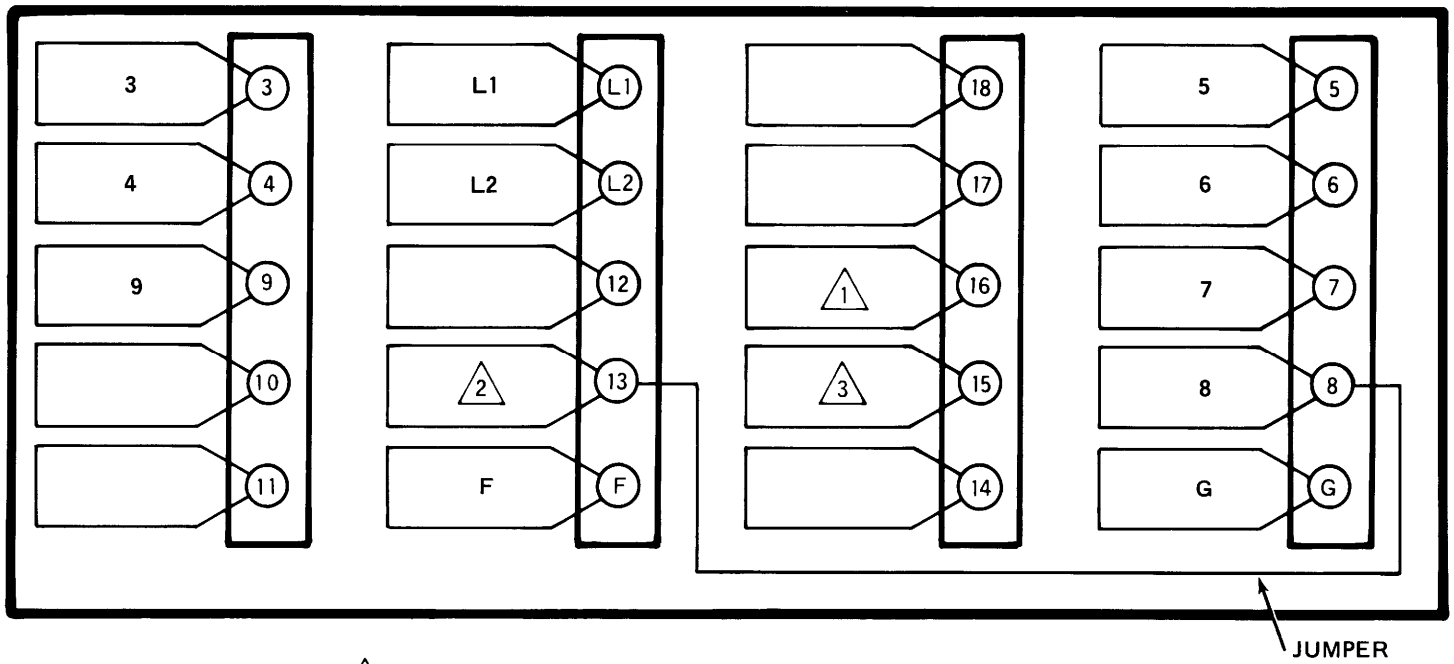
2 JUMPER TERMINAL 13 TO 8.

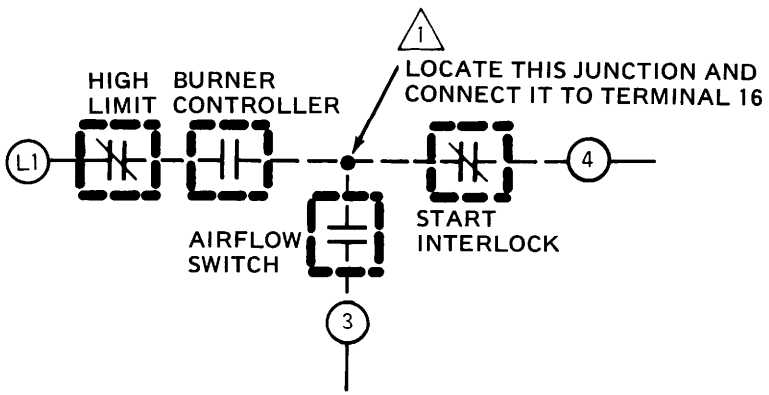
3 ON SOME MODELS THE AIRFLOW SWITCH IS WIRED BETWEEN TERMINALS 10 AND 11. IF THIS IS THE CASE REMOVE THE AIRFLOW SWITCH WIRES FROM TERMINALS 10 AND 11 AND CONNECT THEM TO TERMINALS 3 AND 16.

4 JUMPER TERMINALS 15 TO 8 FOR 30-SECOND PREPURGE.

E1231A

CONVERSION FOR R4150M
USE BC7000L/PM720M2002





2 JUMPER TERMINAL 13 TO 8.

3 JUMPER TERMINAL 15 TO 8 FOR 30-SECOND PREPURGE.

E1232A

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